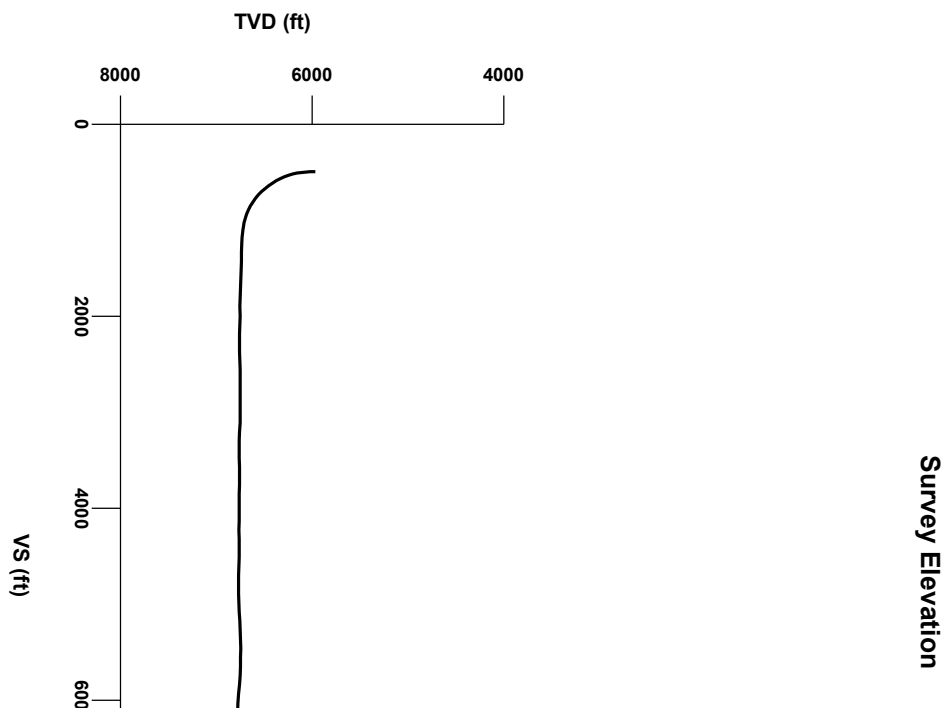
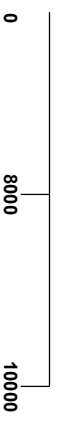
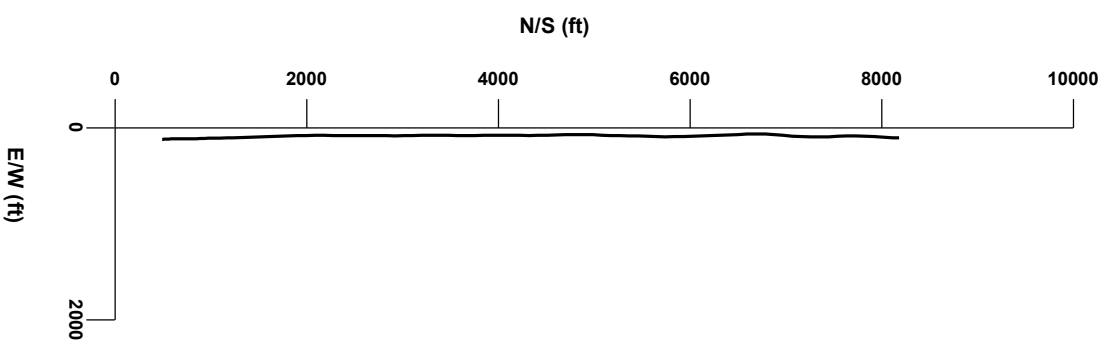


LOG created using LPLOT VH Version 3.0, June 08, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: JENKINS B11-79-1HCM
LOCATION: SEC 11 T5N R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 1,905' FSL; 220' FWL
ELEVATION: 4,603' GL; 4,627' KB
FIELD: WATTENBERG
SPUD DATE: 05/30/2013
TD DATE: 06/07/2013
DATES LOGGED: 06/01/2013 - 06/07/2013 (HORIZONTAL)
DEPTHS LOGGED: 6,071' - 14,173' (HORIZONTAL)
LOGGERS: CHRIS SCAHEL; NATHAN MURPHY
DRILLING FLUID: LSND
DRILLING RIG: H&P - 315
API: 05-123-37194
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: SEE CORRESPONDING VERTICAL LOG: JENKINS B11-79-1HCM VERT.
 LAT/LON 40.41169/-104.52626
 Wellsite Geological Services Provided by Columbine Logging Inc.



Survey Plan



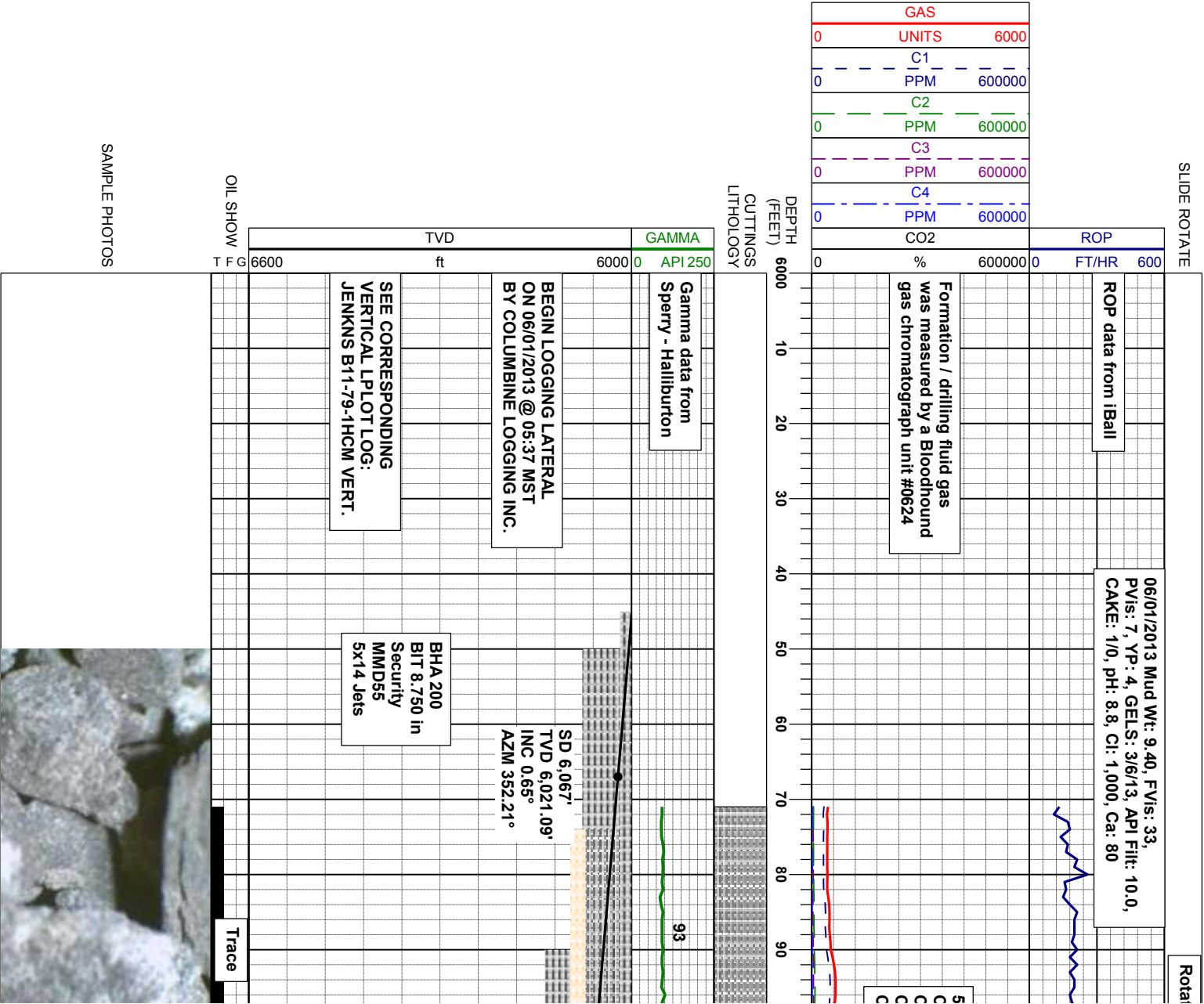


LITHOLOGIES

	Argillaceous Limestone		Bentonite		Chalk
	Limestone		Marl		Sandstone
	Shaly Sandstone		Shaly Siltstone		Silty Shale

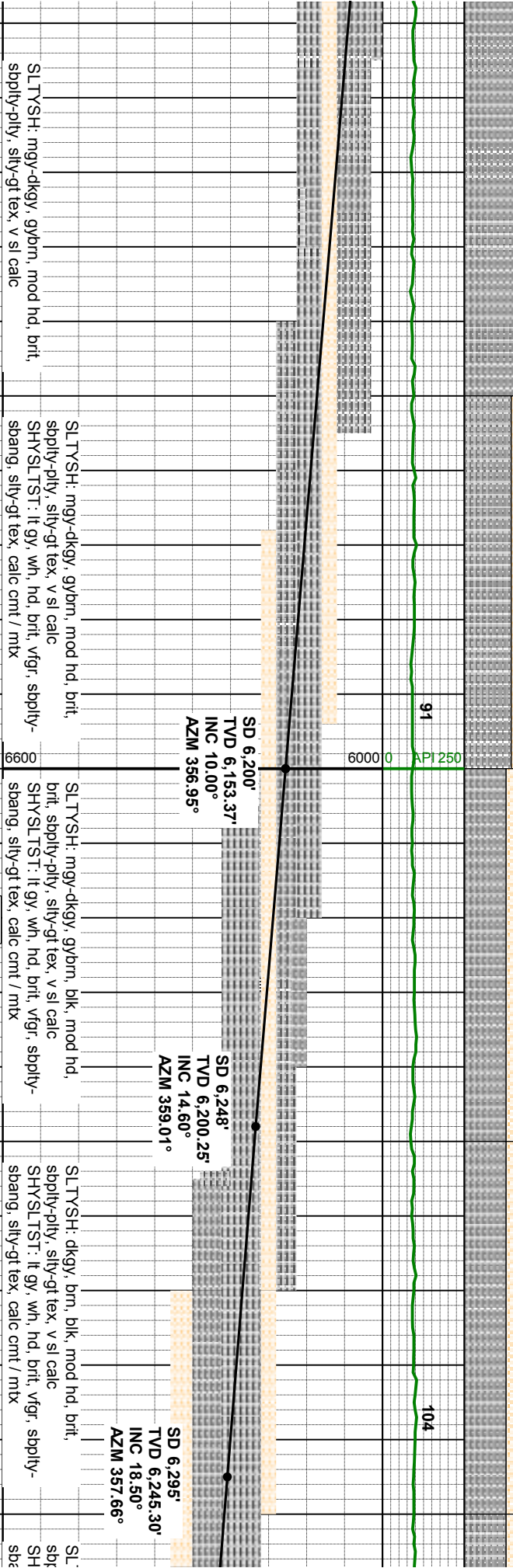
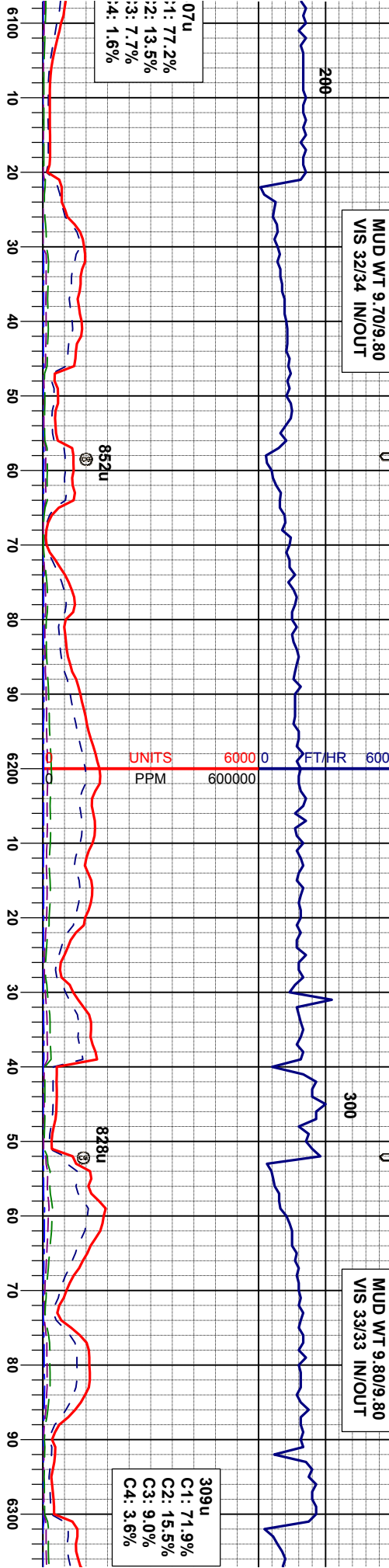
ENGINEERING SYMBOLS

	Connection		Connection Gas		Midnight Depth
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MUD WT 9.70/9.80
VIS 32/34 IN/OUT

MUD WT 9.80/9.80
VIS 33/33 IN/OUT



Fair



MUD WT 10.05/9.95
VIS 32/34 IN/OUT

MUD WT 10.50/10.50
VIS 33/33 IN/OUT

242

1946u

2879u

180

2734u

C1: 67.1%
C2: 18.5%
C3: 9.8%
C4: 4.7%

UNITS
PPM

60000
600000

FT/HR

600

10

20

30

40

50

60

70

80

90

6400

10

20

30

40

50

60

70

80

90

6500

10

20

30

40

50

60

70

80

90

6500

10

<<TVD Scale Change>>

SD 6,390'
TVD 6,333.06'
INC 26.55°
AZM 356.18°

SD 6,438'
TVD 6,375.07'
INC 31.26°
AZM 358.33°

SD 6,484'
TVD 6,413.82'
INC 33.92°
AZM 0.52°

Sharon Spgs Marker @
6,493' MD; 6,421' TVD

Top Niobr.
6,516' MD;

SD 6,343'
TVD 6,290.28'
INC 22.32°
AZM 356.45°

TYSH: dkgy, brn, blk, mod hd, brit-fis,
sily-pty, sily-gt tex, v sl calc
YSLTST: lt gy, wh, hd, brit, vfgr, sbply-
ng, sily-gt tex, calc cnt / mtx

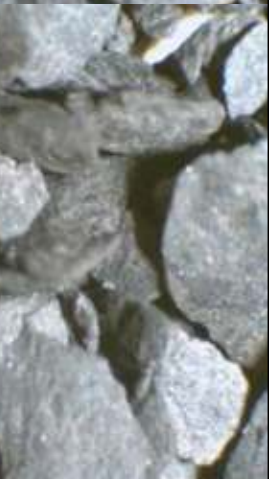
SL TYSH: dkgy, brn, blk, mod hd-hd brit-fis,
sbply-pty, sily-gt tex, v sl calc, intbd w/
SHYSLTST: lt gy, wh, hd, brit, vfgr, sbply-
sbang, sily-gt tex, v calc cnt / mtx

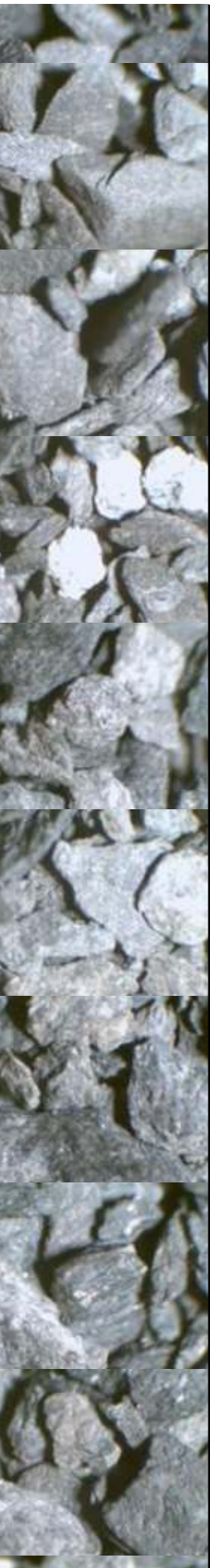
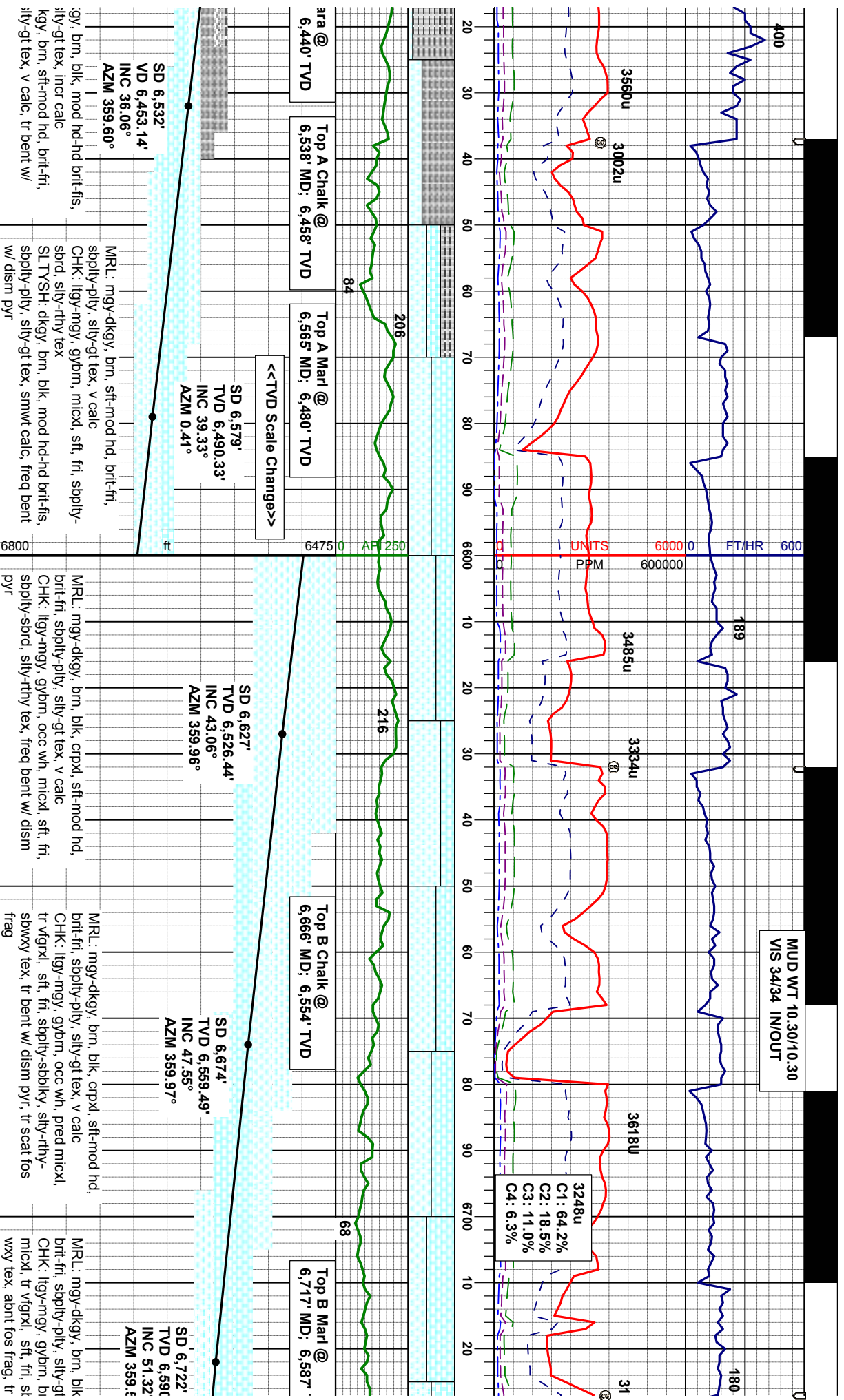
SL TYSH: dkgy, brn, blk, mod hd-hd brit-fis,
sbply-pty, sily-gt tex, v sl calc, tr bent w/
dism pyr

SL TYSH: dkgy, brn, blk, mod hd-hd brit-fis,
sbply-pty, sily-gt tex, incr calc
BENT: yel, org, gy, lt gn, hd, pty-sply, v
brit, disn pyr, bri yel-org mntr flr, tr scat
fos frag

SL TYSH: dk
sbply-pty, s
MRL: mgy-d
sbply-pty, s
dism pyr

Good



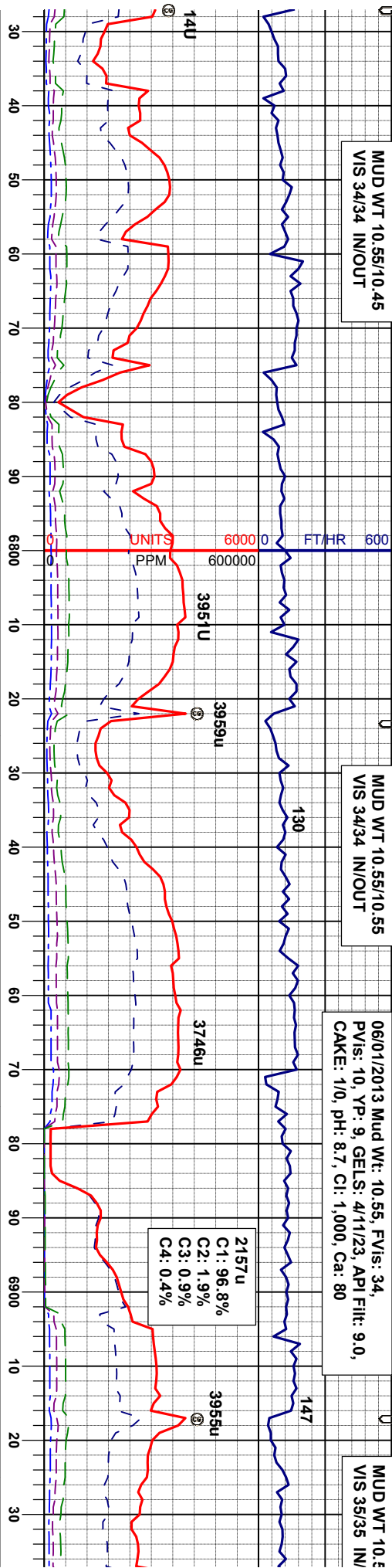


MUD WT 10.55/10.45
VIS 34/34 IN/OUT

MUD WT 10.55/10.55
VIS 34/34 IN/OUT

06/01/2013 Mud Wt: 10.55, FVis: 34,
PVIS: 10, YP: 9, GELS: 4/11/23, API Filtr: 9.0,
CAKE: 1/0, pH: 8.7, Cl: 1.000, Ca: 80

MUD WT 10.5
VIS 35/35 IN/



Top C Chalk @
6,791' MD; 6,631' TVD

Top C Marl @
6,864' MD; 6,666' TVD

SD 6,769'
TVD 6,618.73'
INC 55.42°
AZM 358.58°

SD 6,817'
TVD 6,644.26'
INC 60.30°
AZM 357.45°

SD 6,864'
TVD 6,665.91'
INC 64.83°
AZM 357.84°

SD 6,912'
TVD 6,684.10'
INC 70.63°
AZM 358.39°

crpxl, sft-mod hd,
tex, v calc
nd w/ wh, pred
ppty-sbblky, rthy-
bent w/ dism pyr

CHK: ltgy- ltgybrn, bnd w/ wh, micxl-vfgrxl,
sft, fri, sbply-sbblky, rthy-wxy tex
MRL: mgy-dkgy, brn, blk, crpxl, sft-mod hd,
brit-fri, sbply-pty, silty-gt tex, v calc thru, tr
fos frag, tr bent w/ dism pyr

MRL: mgy-dkgy, brn, blk, crpxl, sft-mod hd,
brit-fri, sbply-pty, silty-gt tex, v calc thru, tr
fos frag, tr bent w/ dism pyr
CHK: ltgy- ltgybrn, bnd w/ wh, micxl-vfgrxl,
sft, fri, sbply-sbblky, rthy-wxy tex

MRL: mgy-dkgy, brn, blk, crpxl, sft-
brit-fri, sbply-pty, silty-gt tex, v calc
fos frag, tr bent w/ dism pyr
CHK: ltgy- ltgybrn, bnd w/ wh, micxl
sft, fri, sbply-sbblky, rthy-wxy tex
LS: lt-mgy-crm, sft-si firm, sbply-sb
rthy, vcalc

Moderate

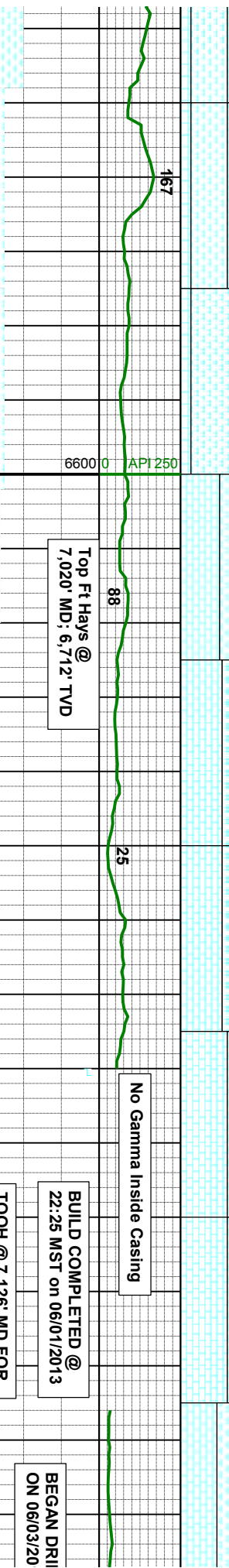
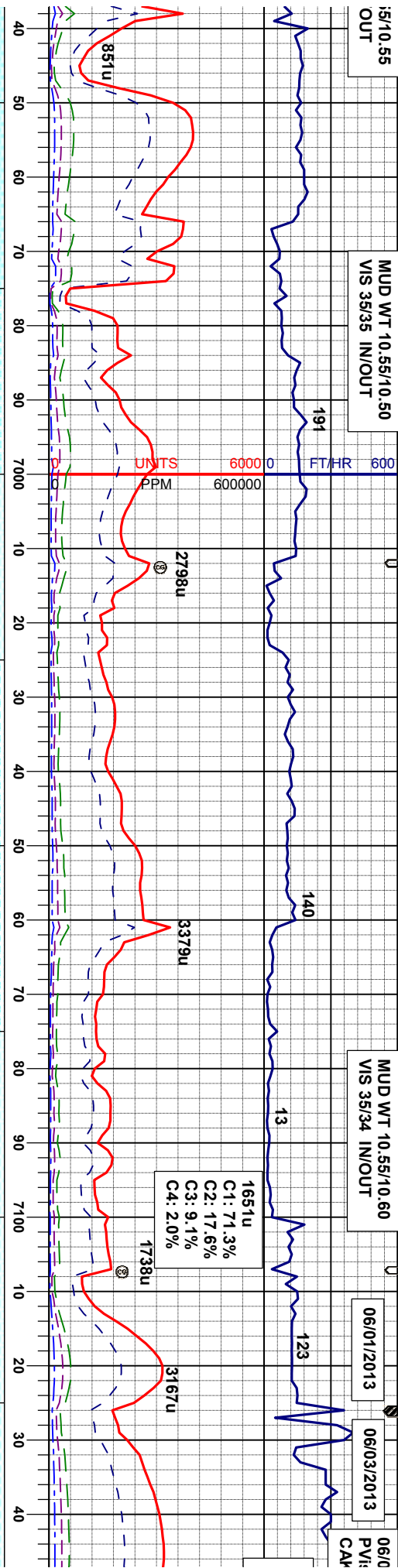


5/10.55
OUT

**MUD WT 10.55/10.50
VIS 35/35 IN/OUT**

**MUD WT 10.55/10.60
VIS 35/34 IN/OUT**

06/01/2013	06/03/2013
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06/0
PVi:
CAH

No Gamma Inside Casing

**BUILD COMPLETED @
22:25 MST on 06/01/2013**

**BEGAN DRILL
ON 06/03/20**

TOOH @ 7,126' MD FOR
INTERMEDIATE CASING

SD 6,959'

TVD 6,698.21

SD 7007

TVD 6,709.65'
INC 78.02°
AZM 358.40°

SD 7054'

TVD 6,718.75'	TVD 6,721.67'
INC 79.65°	INC 81.64°
AZM 359.21°	AZM 359.00°

SD 7,072'

TVD 6,721.67
INC 81.64°
AZM 359.00°

nod hd,	MR.L: mgy-dkgy, b.m, bik, crpxl, sft-mnod hd,
thru, tr	brt-frn, sbply-pity, sfty-gt tex, v calc thru, tr
-vfrgxl,	fos frag, tr bent w/ dism pyr
	LS: lt-mgy-crm, sft-sl firm, sbply-sbblky,
blky,	rthy, vcalc
	CHK- llyg- llygbrn, bnd w/ wh, mickl-vfrgxl,
	sft, frn, sbply-sbblky, rthy-wxy tex

LS: lt-mgy-crm, stf-sl firm, sbplyt-sbbky, rthy, vcalc
MRL: m gy-gyblk, sbbky - sbply, smefis
sl firm - modstf, sily-slmot, calc, sme pyr
cid, sme chk, tr lse fos, tr shyss

LS: lt-mgy-crm, stf-sl firm, sbply-sbply, rthy, vcalc
MRL: m gy-gyblk, sbply - sbply, smefis
sl firm - modstf, slty-slmot, calc, sme pyr
cid, sme chk, tr lse fos, tr shyss

LS, wt, cmn, fgrxl, sft, sbply-sbbkly, rthy-
wytex, vcalc
MRL: m gy-gyblk, sbbkly - sbply, smeifs,
sl frm - modst, stly-slmot, calc, sme pyr, tr
chk, tr lse fos, tr stlyss
spl contin by uphole sed

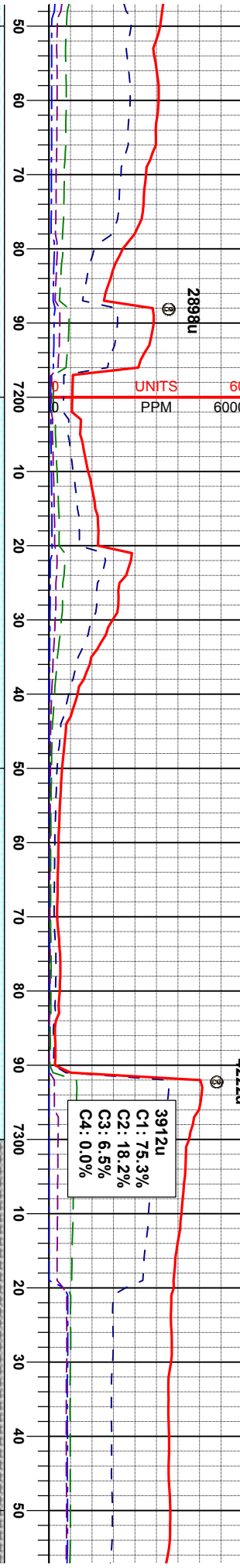


12/2013 Mud Wt: 10.65, FVis: 36,
s: 11, YP: 9, GELS: 4/13/27, API Filtr: 9.0,
CE: 1/0, pH: 8.7, Cl: 1.000, Ca: 80

06/03/2013 Mud Wt: 9.30, FVis: 31,
PVIS: 5, YP: 6, GELS: 2/5/10, API Filtr: 13.0,
CAKE: 1/0, pH: 8.6, Cl: 1.000, Ca: 80

MUD WT 9.1
VIS 35/33 IN

06/02/2013 Mud Wt: 10.70, FVis: 35,
PVIS: 11, YP: 10, GELS: 4/13/27, API Filtr: 9.0,
CAKE: 1/0, pH: 8.7, Cl: 1.000, Ca: 80



LLING LATERAL
13 @ 04:27 MST

BHA 300
BIT 6.125 in
Smith
FXD54
5x14 JETS

SD 7,158'
TVD 6,730.44'
INC 86.65°
AZM 358.84°

SD 7,221'
TVD 6,733.69'
INC 87.44°
AZM 358.25°

SD 7,316'
TVD 6,736.48'
INC 89.20°
AZM 358.18°

90% LS: wh, crm, fgrrl, sft, sbply-sbdky,
rthy-wxytex, v calc
10% MRL: mgy-dkgy, blk, sbply-sbdky,
brt - fls, sft-mod hd, sily-slmot tex, v calc

100% LS: wh, crm, fgrrl, sft, sbply-sbdky,
rthy-wxytex, v calc, freq fos frag

100% LS: wh, crm, tan, fgrrl, sft, sbply-
sbdky, rthy-wxytex, v calc, freq fos frag

90% LS: wh, crm, tan, fgrrl, sft, sbply-
sbdky, rthy-wxytex, v calc
10% SLTYSH: mgy-dkgy, blk, hd, sbply-
ply, sily-gt tex, smwt calc, freq fos frag



59.10
I/OUT

MUD WT 9.0/8.9
VIS 37/35 IN/OUT

359

88

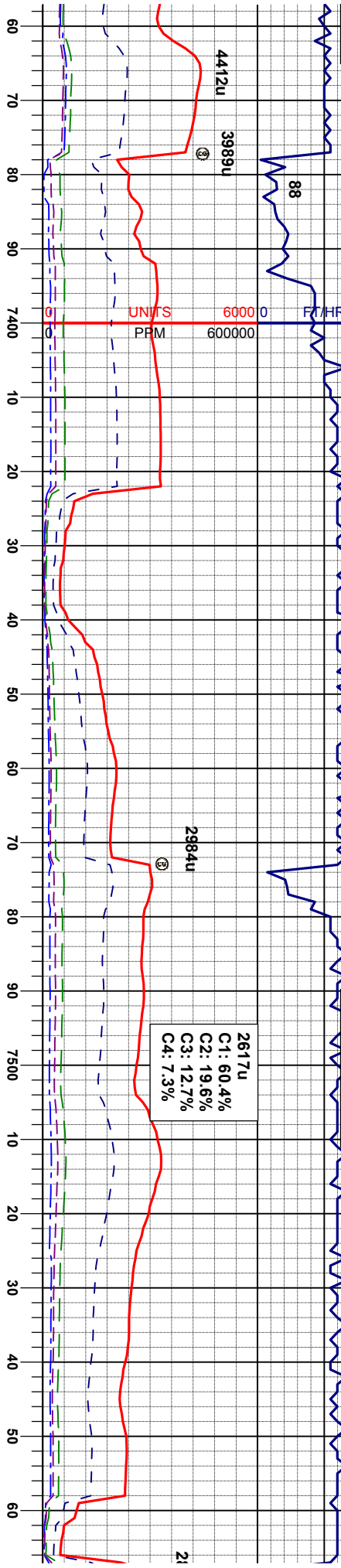
4412u
3989u

60000
600000
UNITS
PPM

2984u

2617u
C1: 60.4%
C2: 19.6%
C3: 12.7%
C4: 7.3%

21



AP1250

6600

34

SD 7,411'
TVD 6,739.14'
INC 87.59°
AZM 358.08°

SD 7,506'
TVD 6,742.59'
INC 88.24°
AZM 357.87°

ft

3% LS: wh, cm, tan, fgrxl, sft, brit-fri,
sply-sbblky, rthy-wxy tex, v calc
3% SLTYSH: mgy-dkgy, blk, hd, sbply-
ply, silty-gt tex, smwt calc, freq fos frag

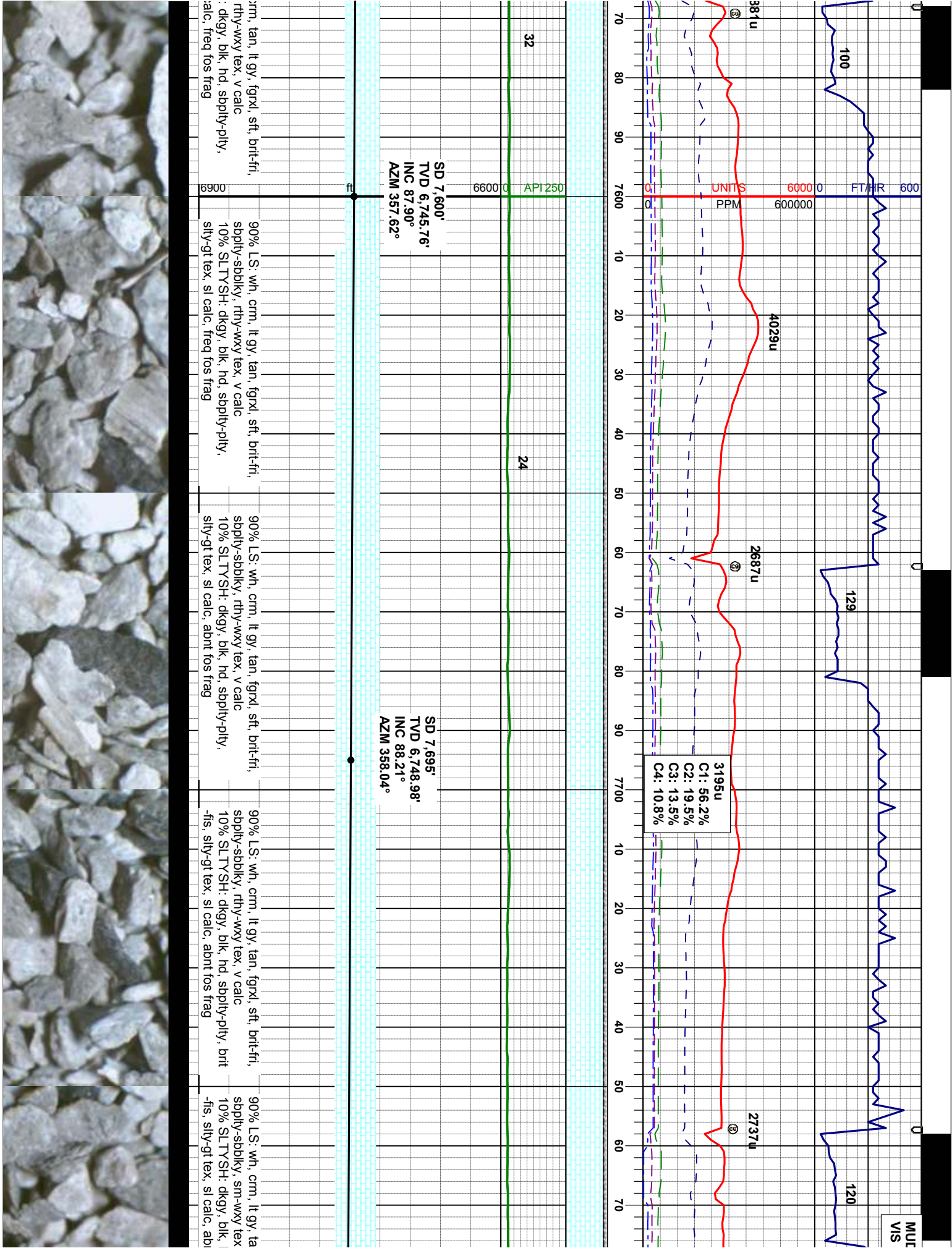
90% LS: wh, cm, tan, lt gy, fgrxl, sft, brit-fri,
sply-sbblky, rthy-wxy tex, v calc
10% SLTYSH: mgy-dkgy, blk, hd, sbply-
ply, silty-gt tex, smwt calc, freq fos frag

90% LS: wh, cm, tan, lt gy, fgrxl, sft, brit-fri,
sply-sbblky, rthy-wxy tex, v calc
10% SLTYSH: mgy-dkgy, blk, hd, sbply-
ply, silty-gt tex, smwt calc, freq fos frag

90% LS: wh, cm, tan, lt gy, fgrxl, sft, brit-fri,
sply-sbblky, rthy-wxy tex, v calc
10% SLTYSH: dkgy, blk, hd, sbply-
ply, silty-gt tex, smwt calc, freq fos frag

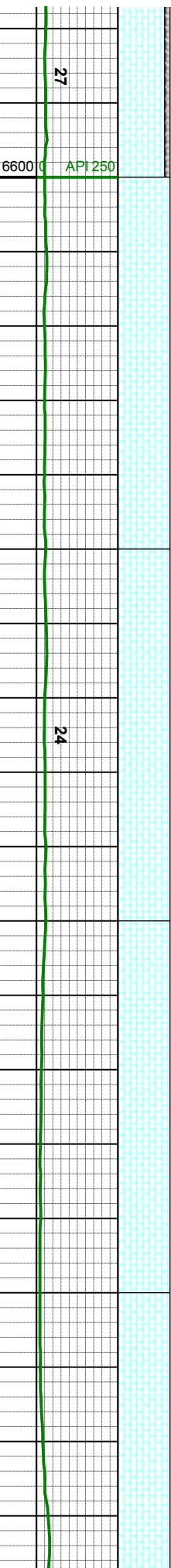
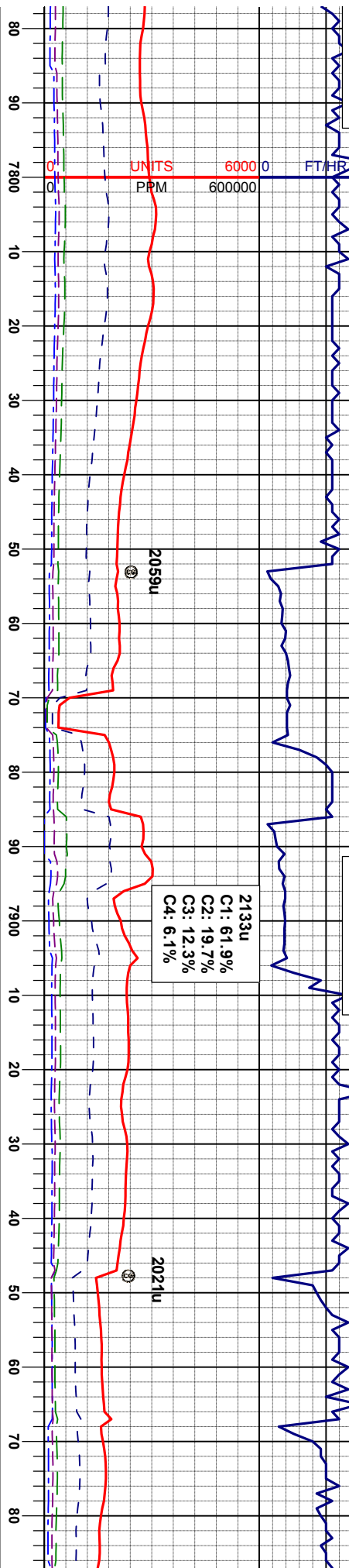
90% LS: wh, c
sply-sbblky,
10% SLTYSH
silty-gt tex, sl c





WT 9.05/9.05
36/36 IN/OUT

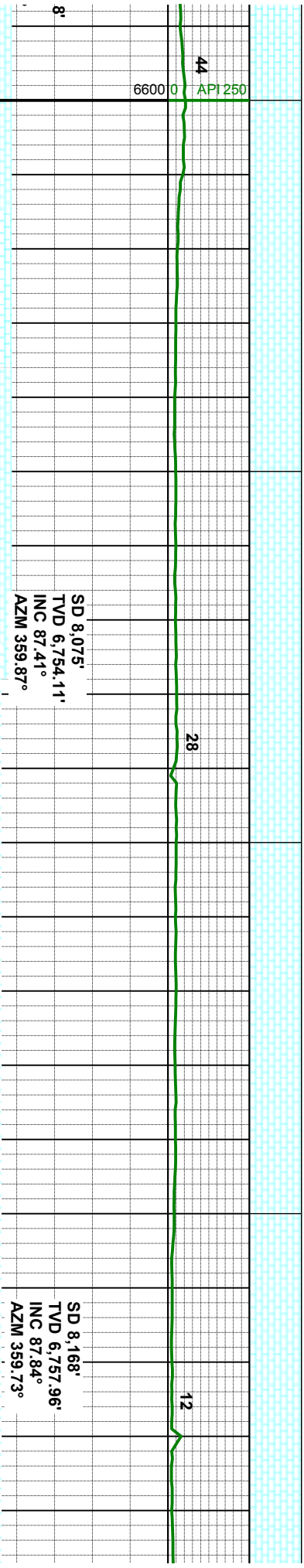
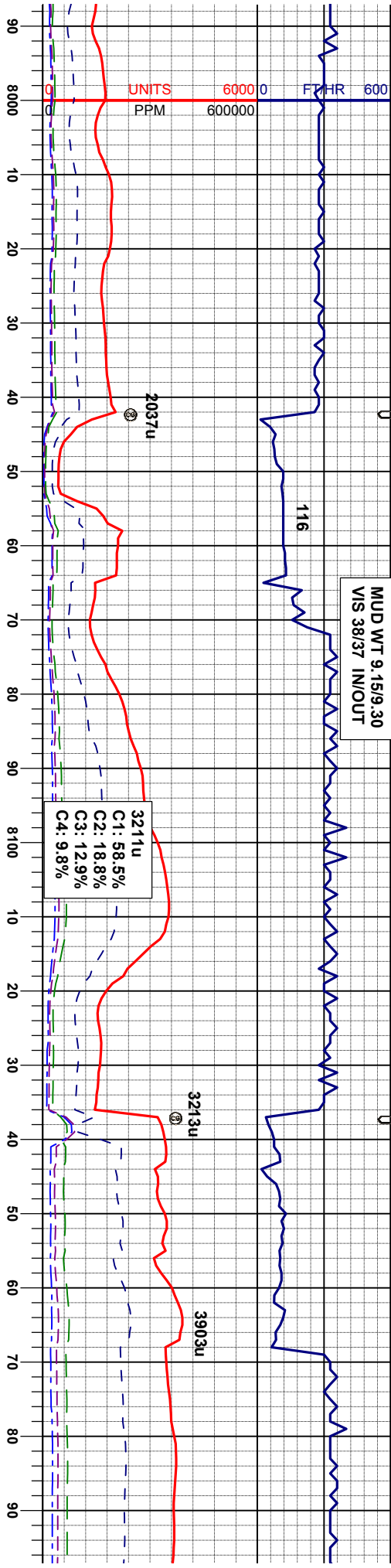
MUD WT 9.19/9.2
VIS 36/36 IN/OUT



Depth (ft)	SD	TVD	INC	AZM	Log Description
0	7,790'	6,751.90'	88.27°	357.50°	100% L.S.: wh, crm, lt gy, tan, fgrxl, sft, brit-fri, sblply-sbblky, sm-wxy tex, v calc, abnt fos frag, tr sltysn
10	7,885'	6,753.57'	89.72°	359.17°	100% L.S.: wh, crm, lt gy, tan, mgrxl, sft, brit-fri, sblply-sbblky, sm-wxy tex, v calc, abnt fos frag, tr sltysn
20	7,980'	6,752.8'	91.11°	359.88°	100% L.S.: wh, crm, lt gy, tan, mgrxl, sft, brit-fri, sblply-sbblky, vit-wxy tex, v calc, abnt fos frag, tr sltysn

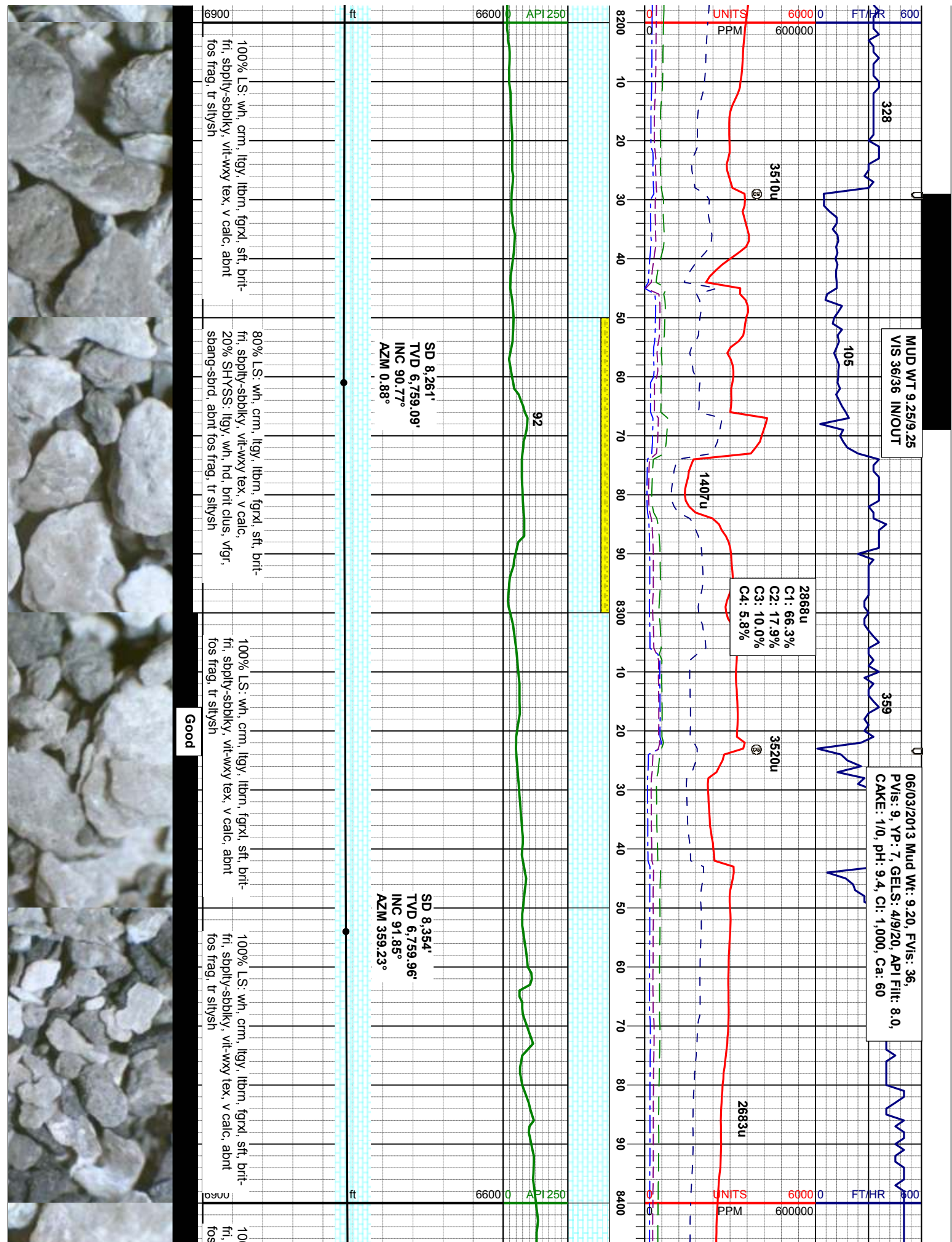


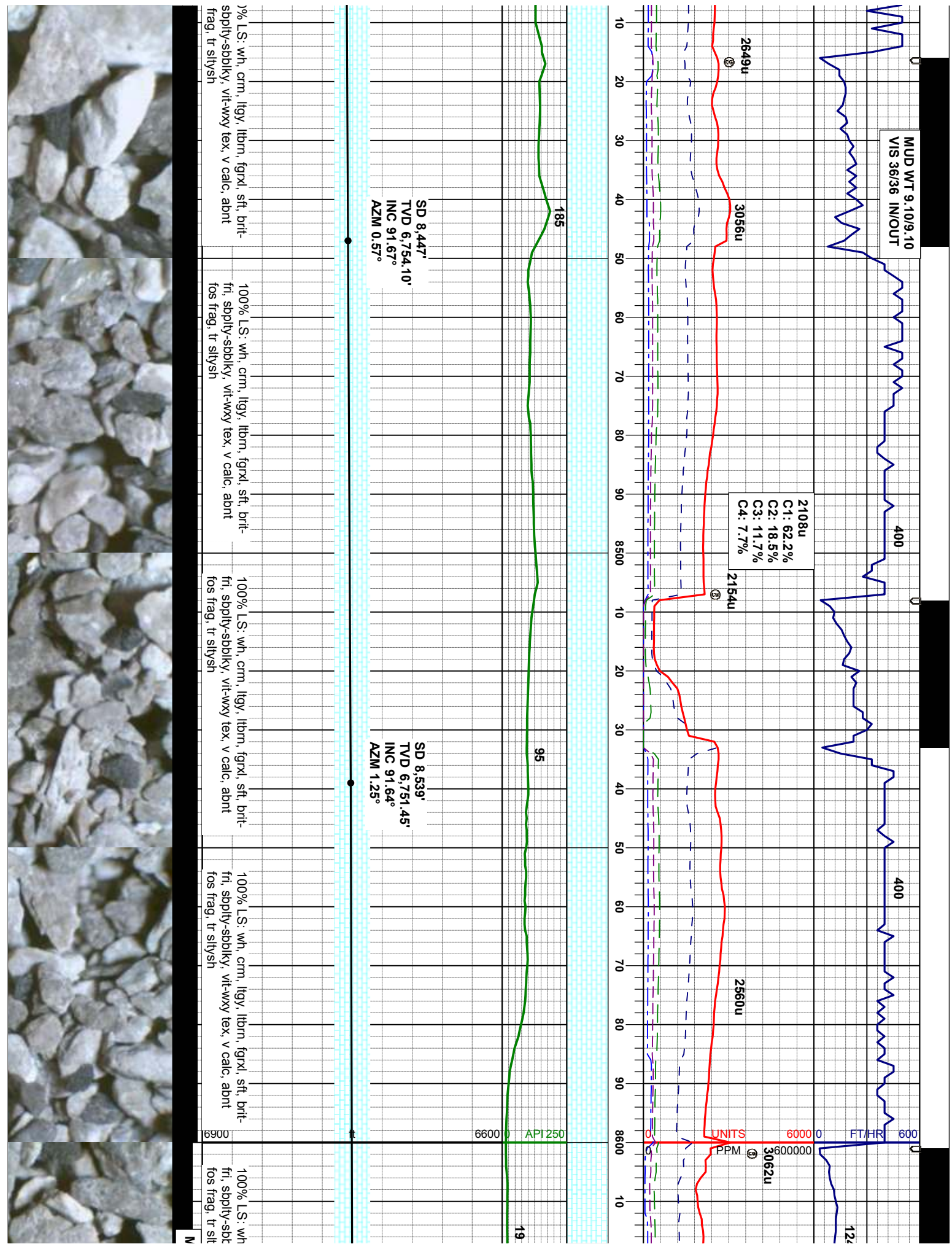
MUD WT 9.15/9.30
VIS 38/37 IN/OUT

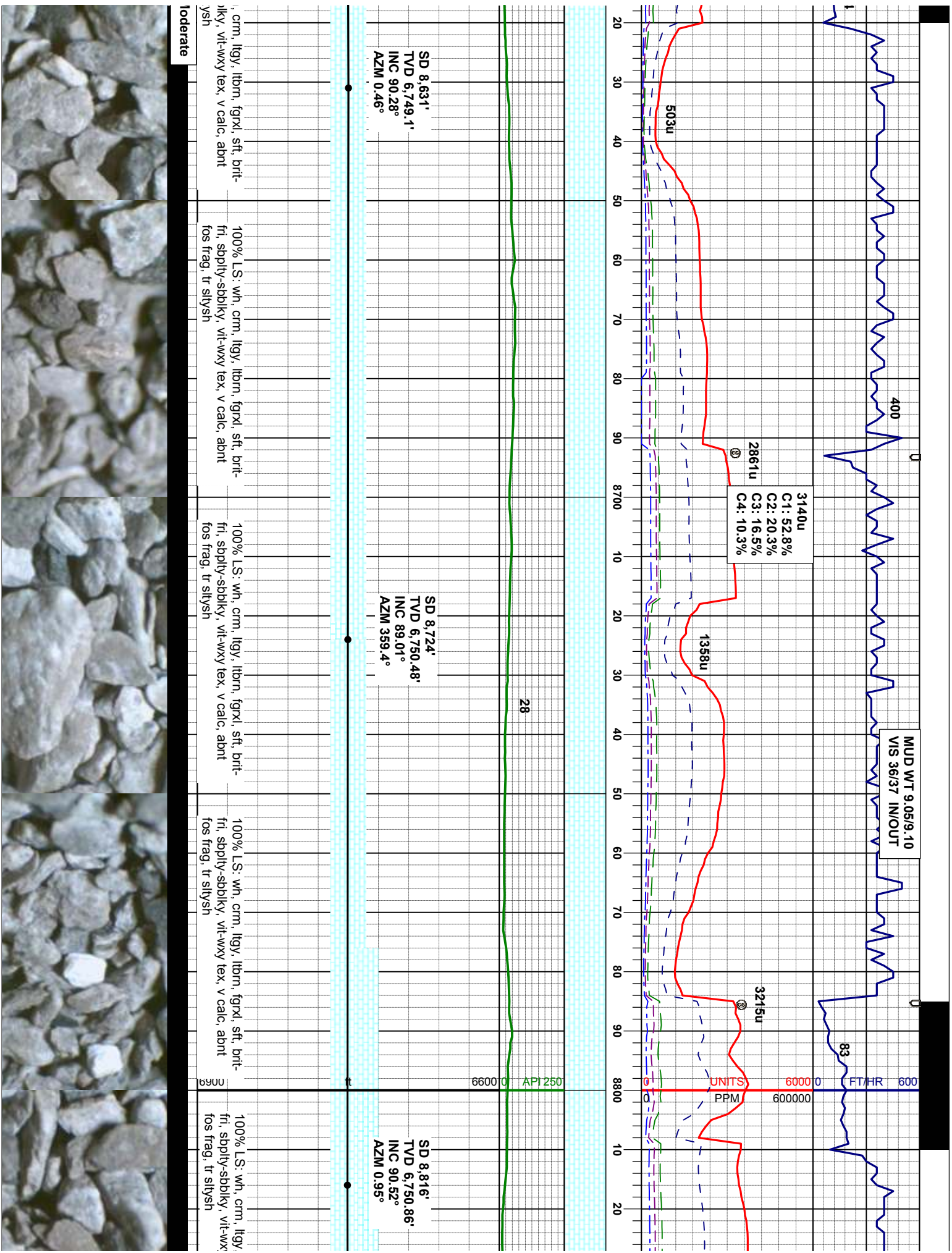


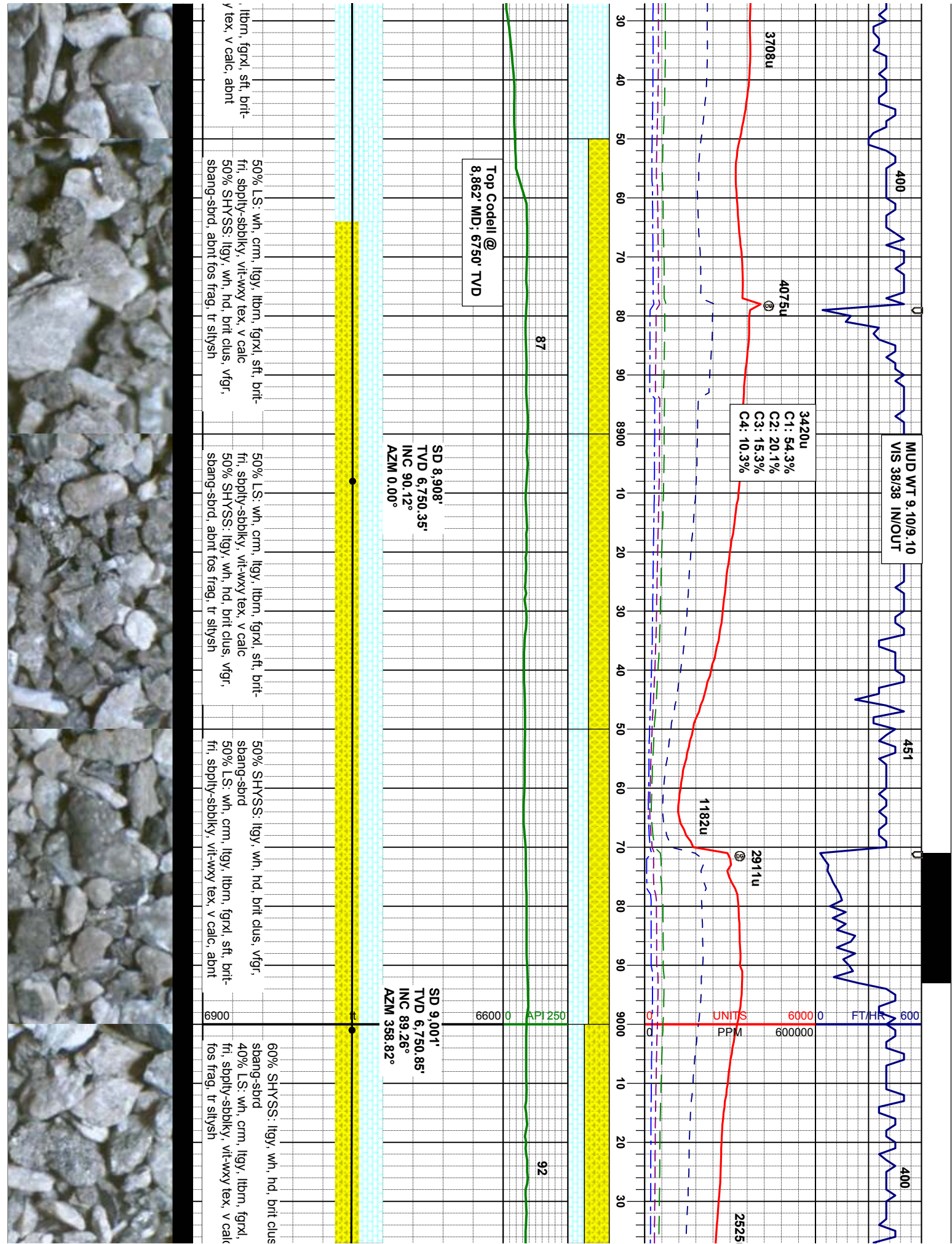
sft, brlt- abnt	100% LS: wh, crm, lt gy, tan, fgrxl, sft, brlt- fri, spltly-sbblky, vit-wxy tex, v calc, abnt fos frag, tr silysh	100% LS: wh, crm, lt gy, tan, fgrxl, sft, brlt- fri, spltly-sbblky, vit-wxy tex, v calc, abnt fos frag, tr silysh	100% LS: wh, crm, ltgy, lbrn, fgrxl, sft, brlt- fri, spltly-sbblky, vit-wxy tex, v calc, abnt fos frag, tr silysh	100% LS: wh, crm, ltgy, lbrn, fgrxl, sft, brlt- fri, spltly-sbblky, vit-wxy tex, v calc, abnt fos frag, tr silysh
6900				

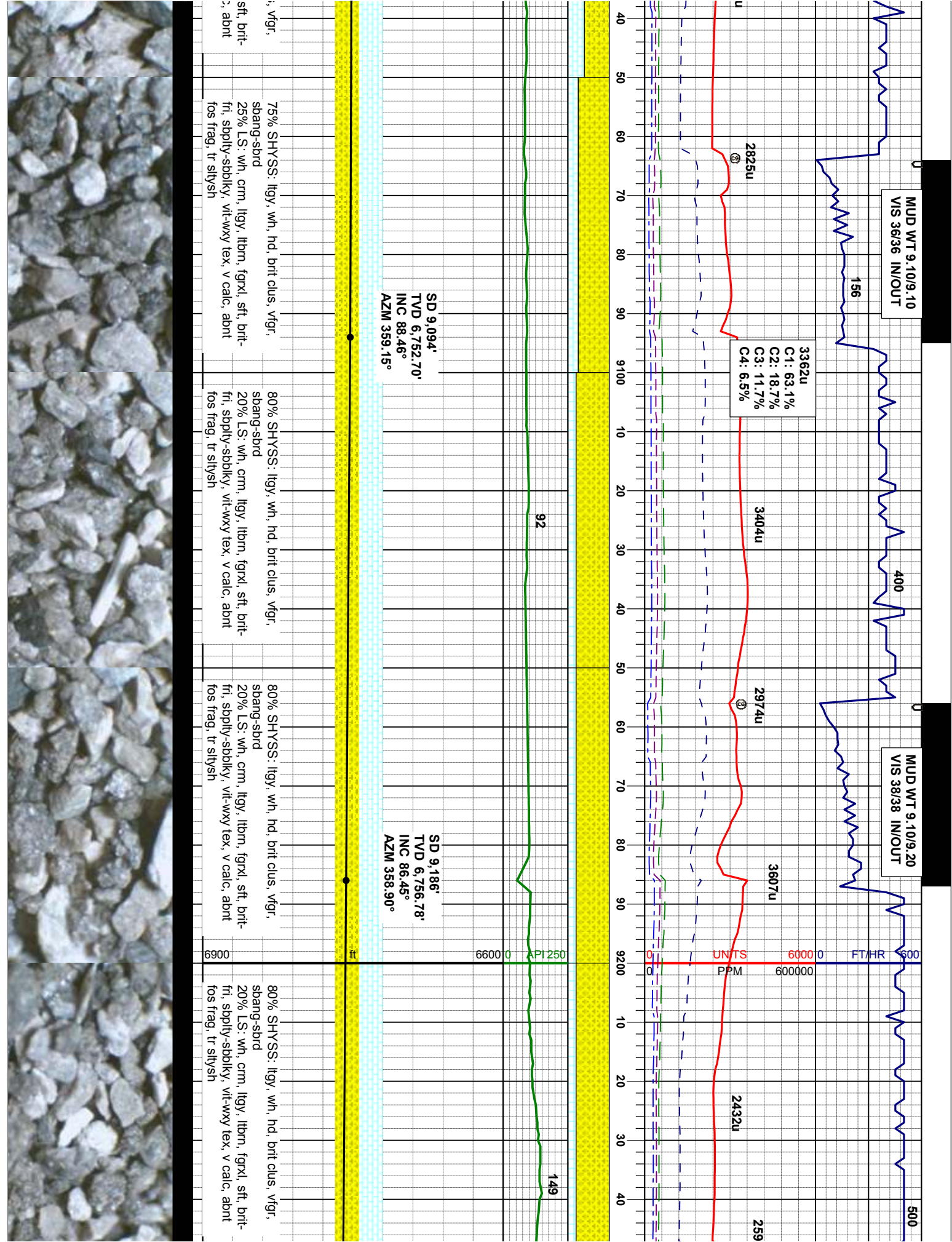


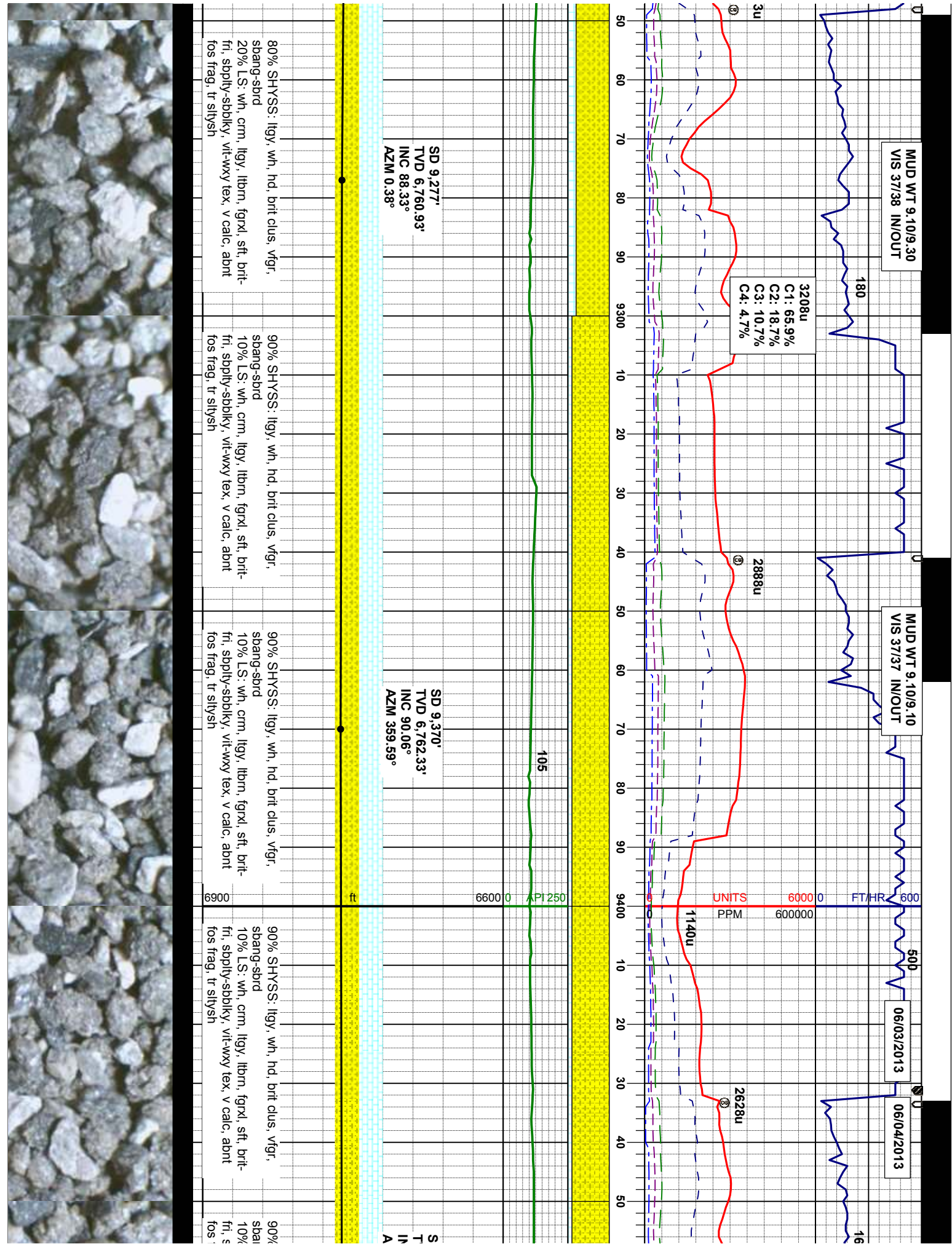


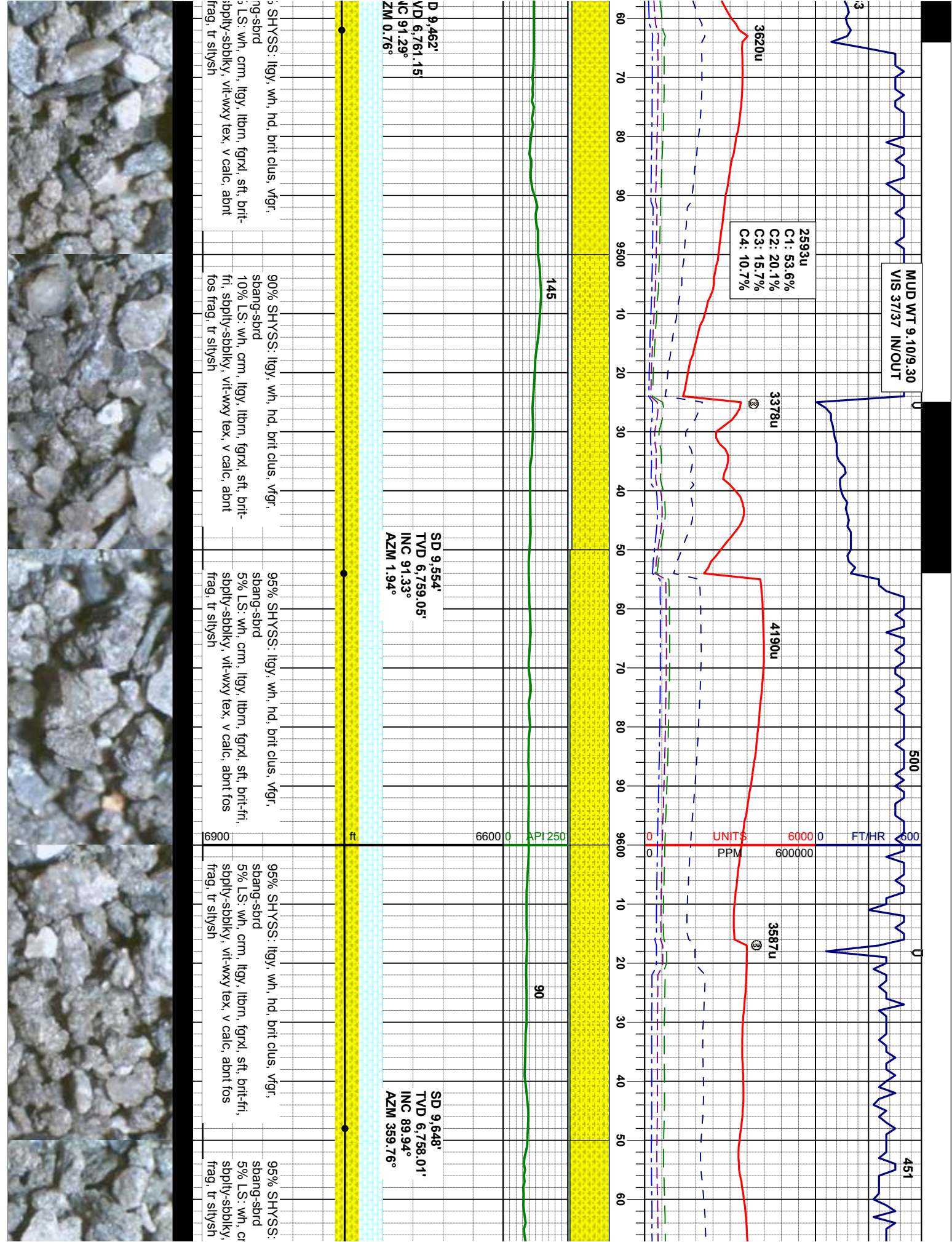


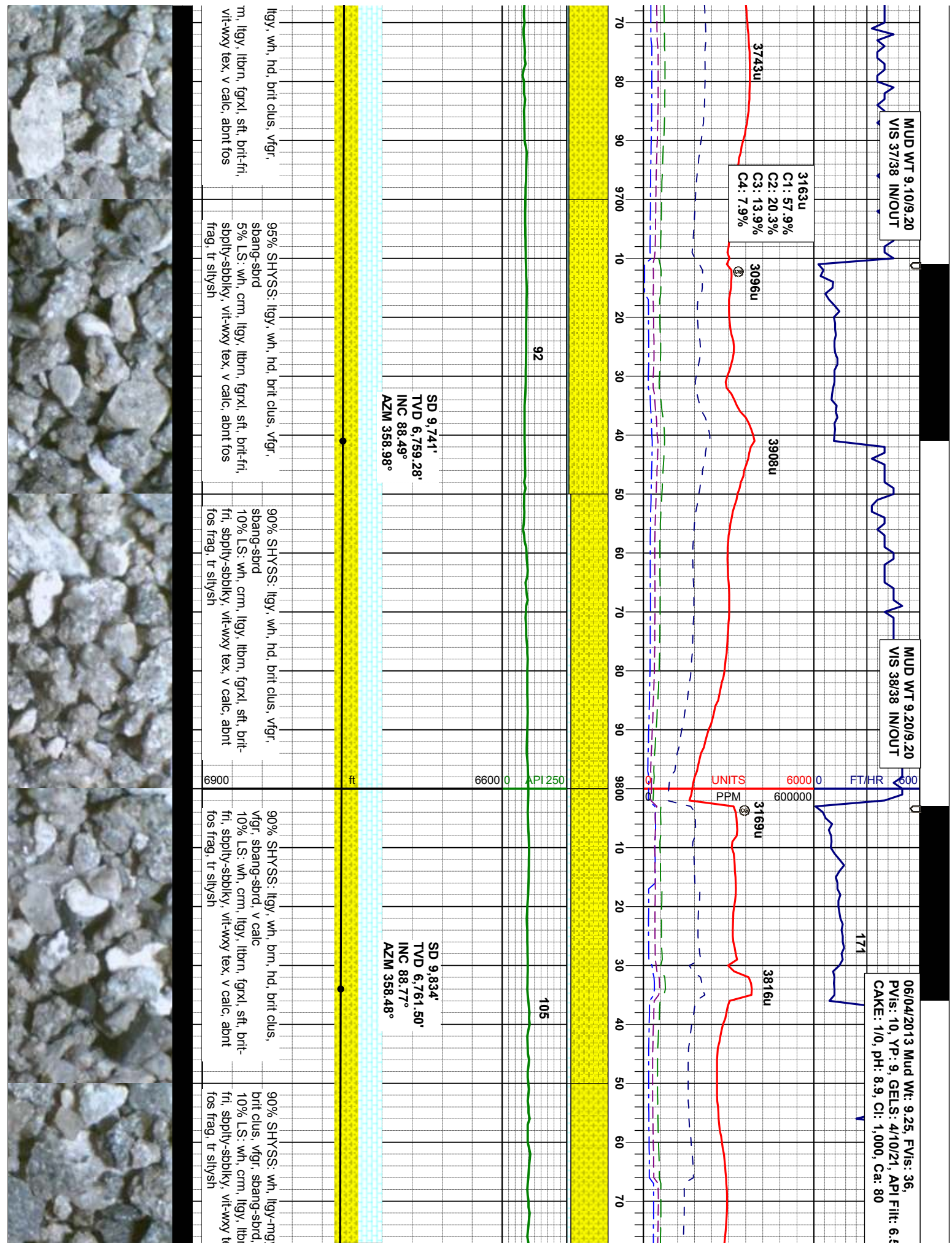


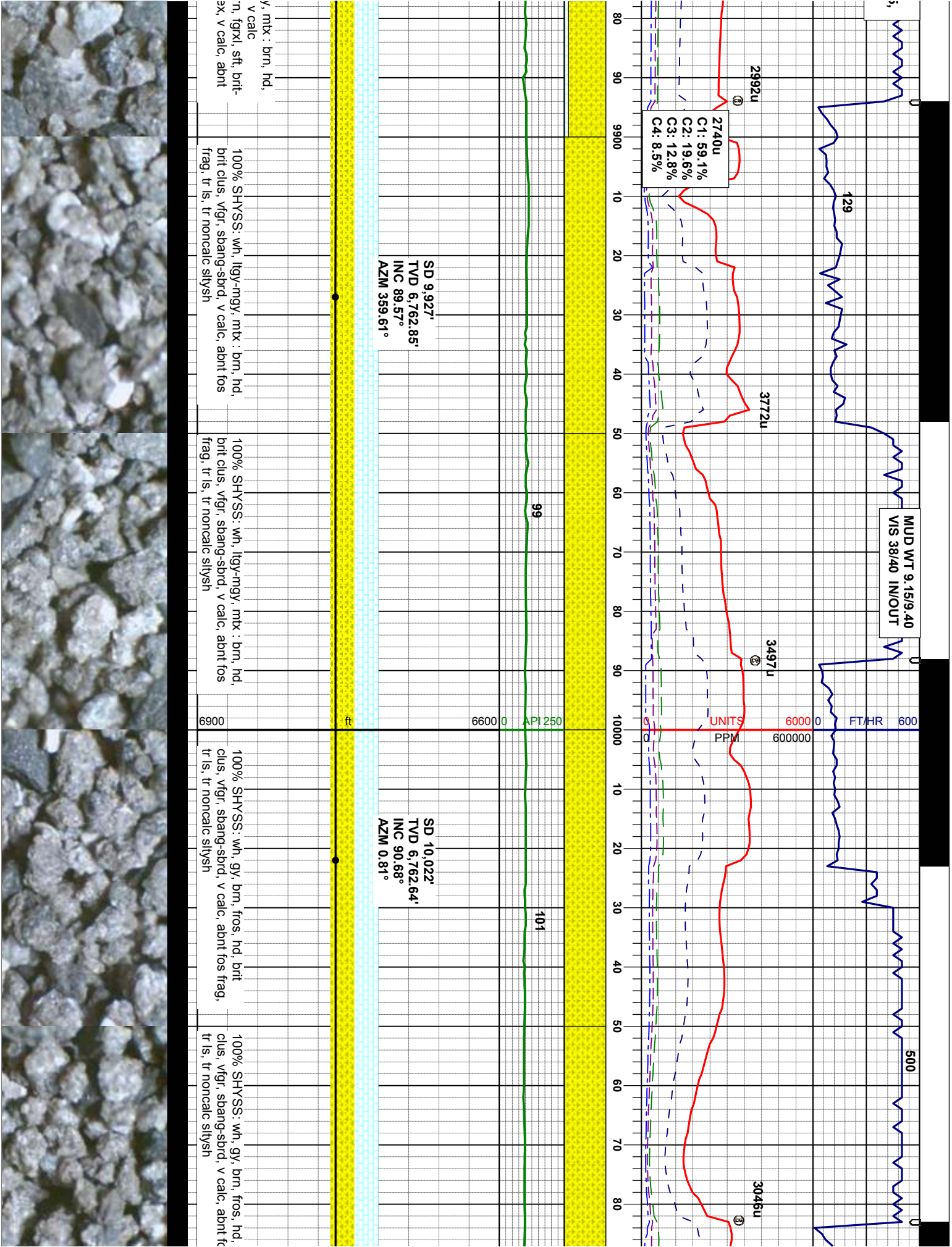


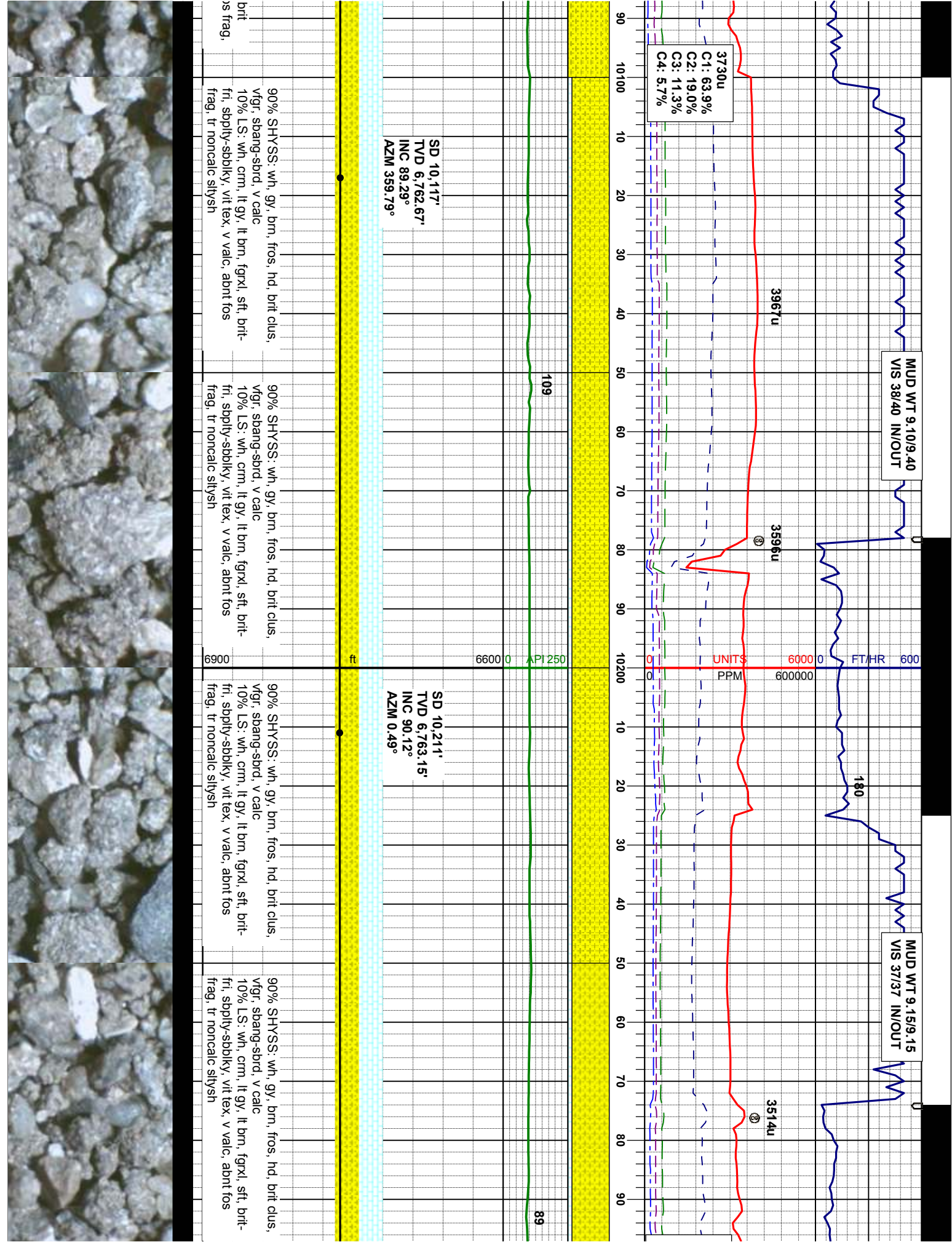


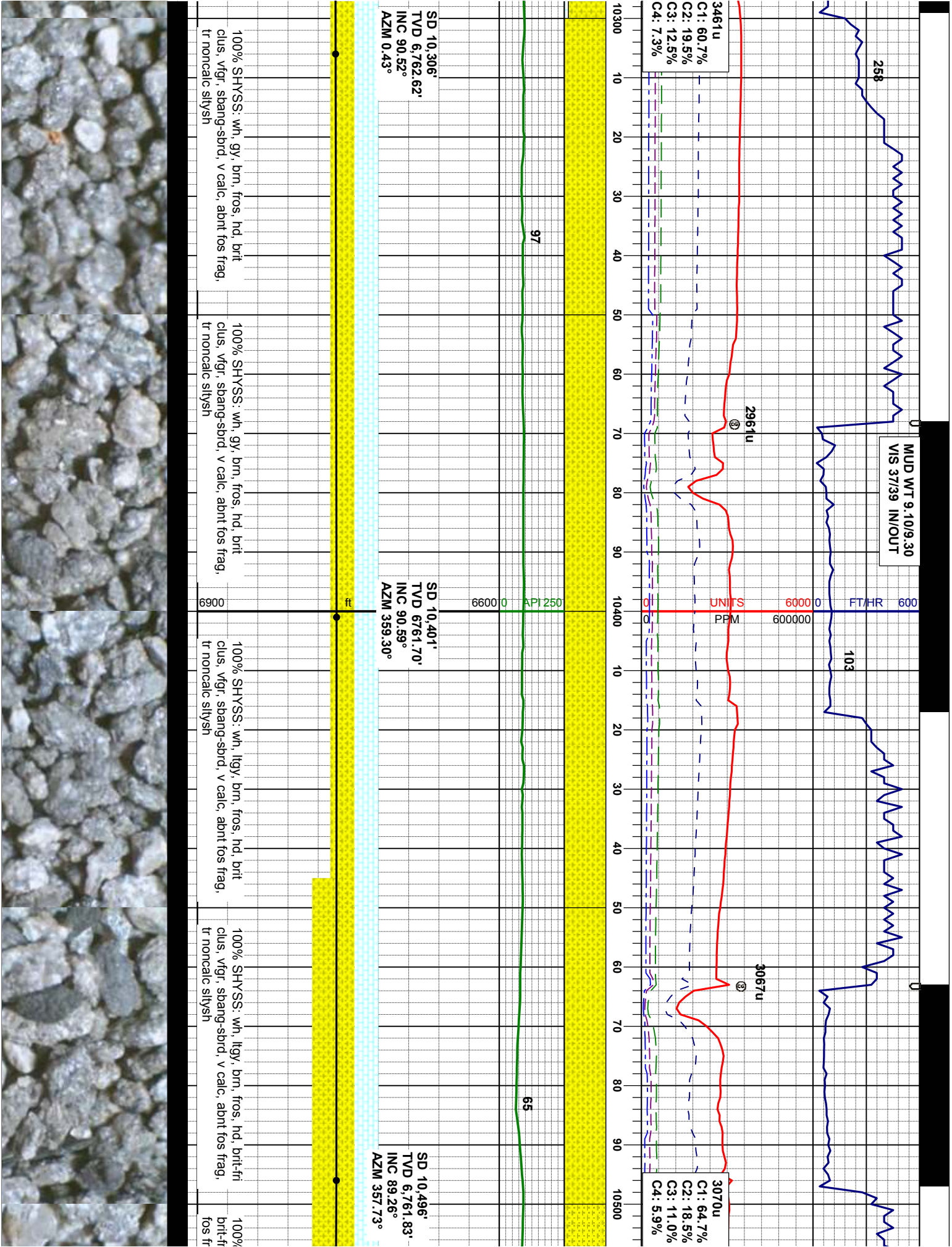


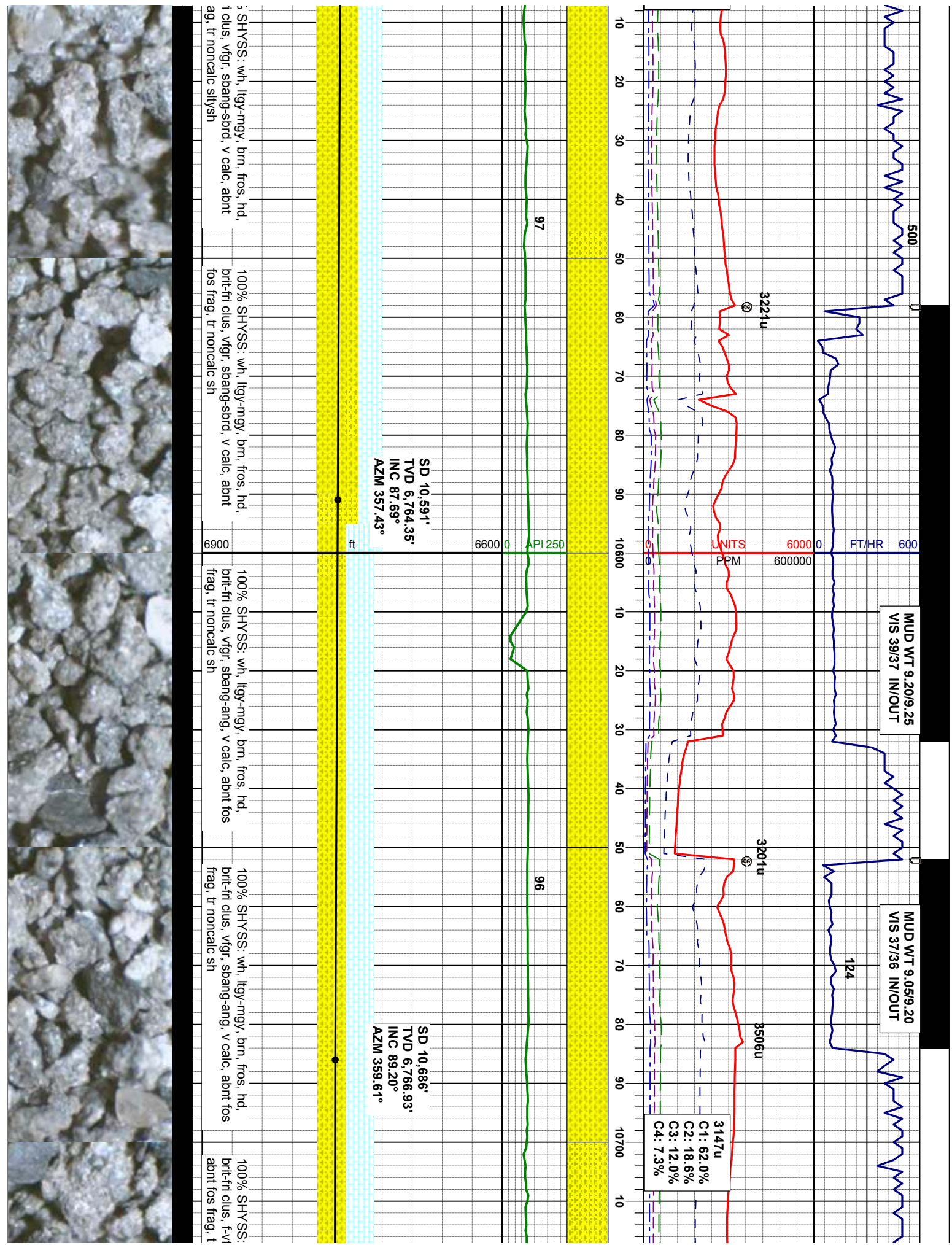


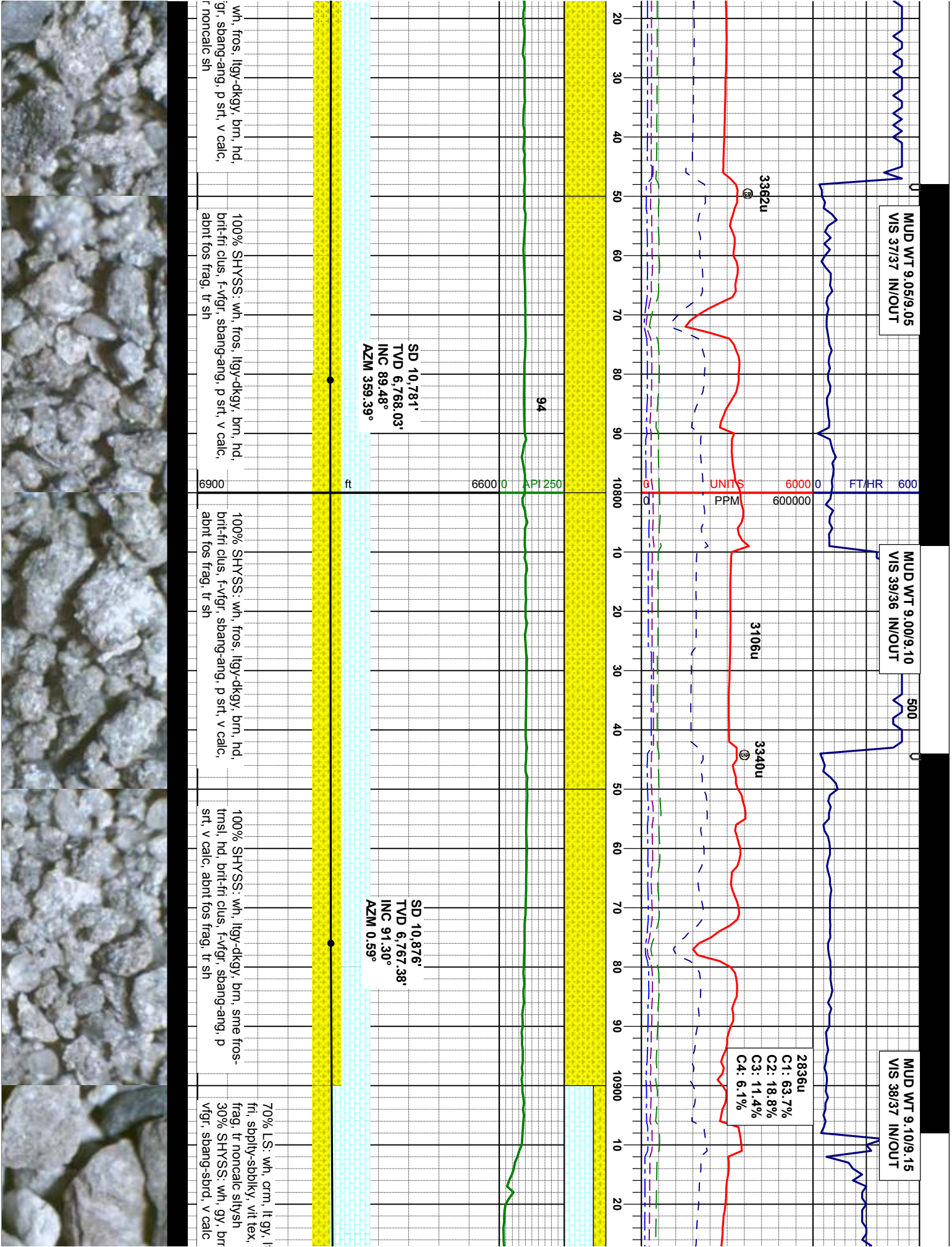




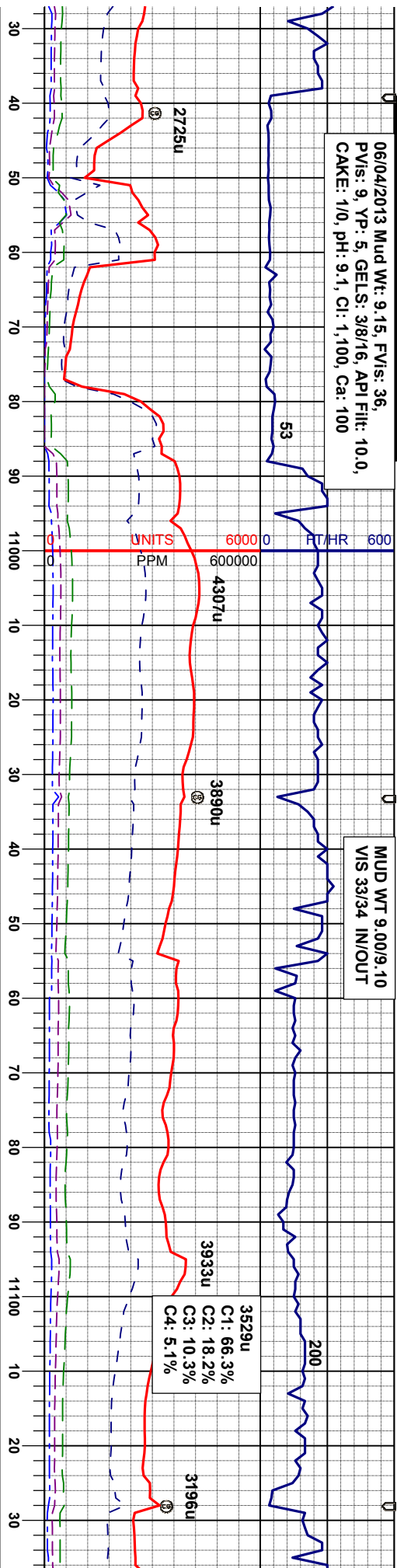








MUD WT 9.00/9.10
VIS 33/34 IN/OUT



SD 10,971'
TVD 6,764.25'
INC 92.47°
AZM 3.30°

SD 11,066'
TVD 6,759.83'
INC 92.87°
AZM 2.84°

t brn, fgxl, sft, brit-
v calc, abnt fos

70% L.S.: wh, crm, lt gy, lt brn, fgxl, sft, brit-
fri, sbply-sbdkly, witex, v calc, abnt fos
frag, tr noncalc stlysh
30% SHYSS: wh, gy, brn, fros, hd, brit cilus,
vfgl, sbang-sbrd, v calc

100% LS: wh, crm, lt gy, lt brn, fgrl, sft, brit
-fri, sbply-sbply, vit tex, v calc, abnt fos
frag, tr noncalc siltysh

100% LS: wh, crm, lt gy, lt brn, fgrl, sft, brit
-fi, sbply-sbply, vit tex, v calc, abnt fos
frag, tr noncalc sltysh

90% LŠ: wh, crm, lt gy, lt brn, fgxl
fri, sbply-sbblky, vit tex, v calc, ab
frag, tr noncalc sltysh
10% SHYSS: wh, gy, brn, fros, hd,
vygr, sbang-sbrd, v calc

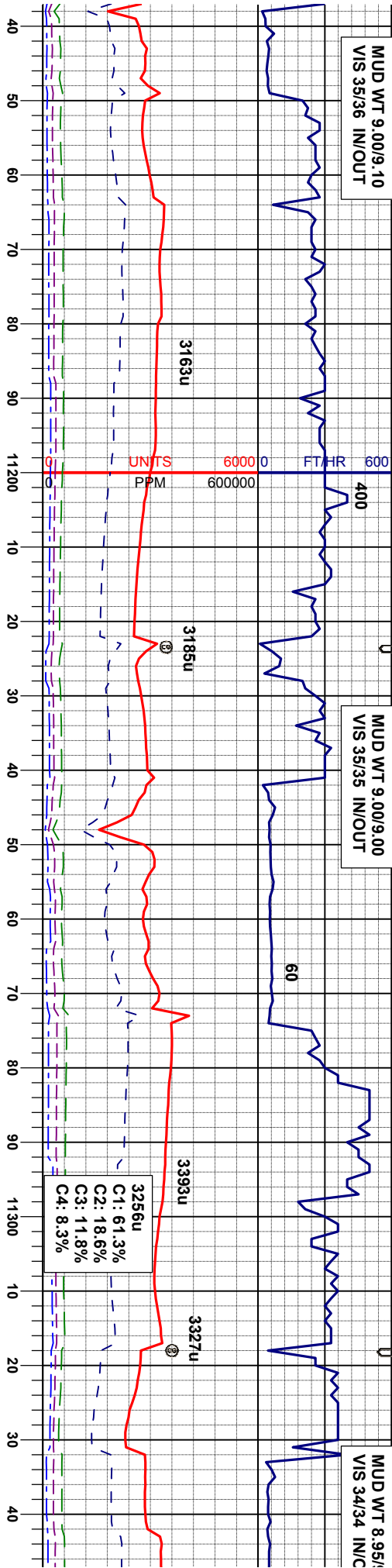
Good



MUD WT 9.00/9.10
VIS 35/36 IN/OUT

MUD WT 9.00/9.00
VIS 35/35 IN/OUT

MUD WT 8.95/
VIS 34/34 INC



SD 11,160'
TVD 6,755.00'
INC 93.02°
AZM 0.79°

SD 11,255'
TVD 6,750.51'
INC 92.40°
AZM 1.13°

SD
TVC
INC
AZM

85% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
15% SHYSS: wh, gy, brn, fros, hd, brit clus,
vfg, sbang-sbrd, v calc

50% MRL: m gy- gyblk, sbblky - sbply,
smefts, sl firm - modstf, slty-slmot, calc,
sme pyr ctd, sme chk, tr lse fos, tr shys
40% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
10% SHYSS: wh, gy, brn, fros, hd, brit clus,
vfg, sbang-sbrd, v calc

50% MRL: m gy- gyblk, sbblky - sbply,
smefts, sl firm - modstf, slty-slmot, calc,
sme pyr ctd, sme chk, tr lse fos, tr shys
40% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
10% SHYSS: wh, gy, brn, fros, hd, brit clus,
vfg, sbang-sbrd, v calc

70% MRL: m gy- gyblk, sbblky - sbply,
smefts, sl firm - modstf, slty-slmot, calc,
sme pyr ctd, sme chk, tr lse fos, tr shys
30% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc sltysh

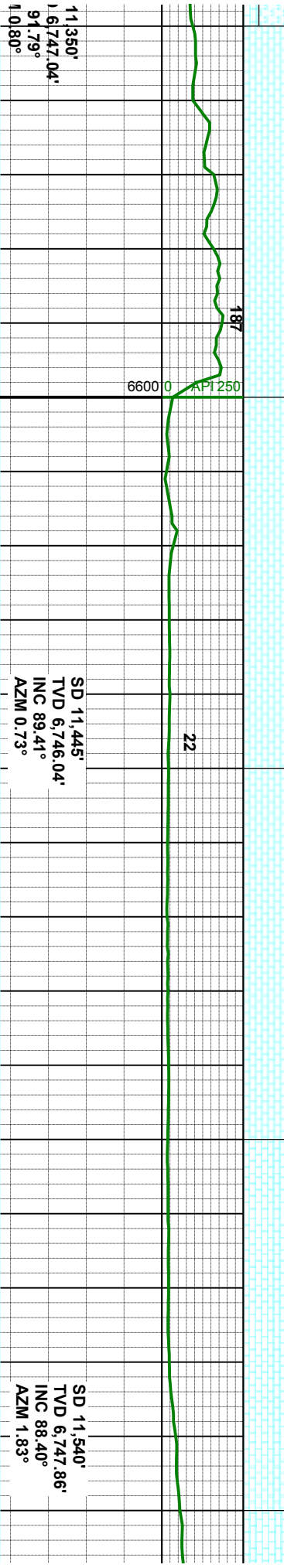
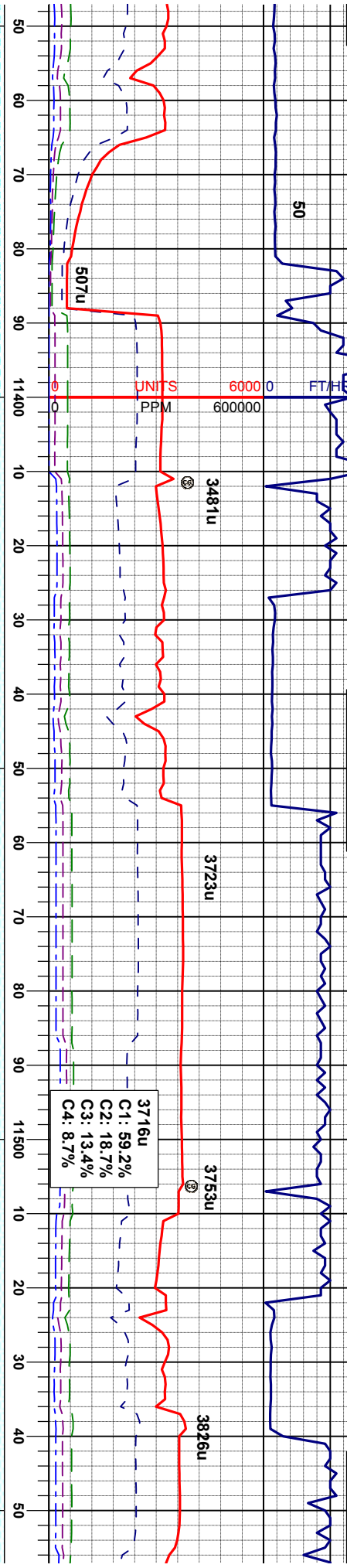


9.00
UT

MUD WT 9.00/8.90
VIS 34/33 IN/OUT

06/04/2013 06/05/2013

MUD WT 9.00
VIS 33/33 IN/

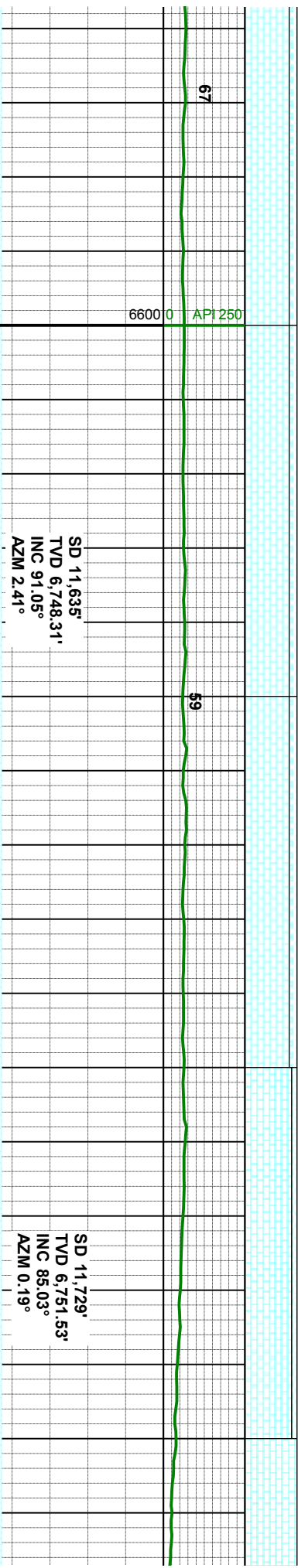
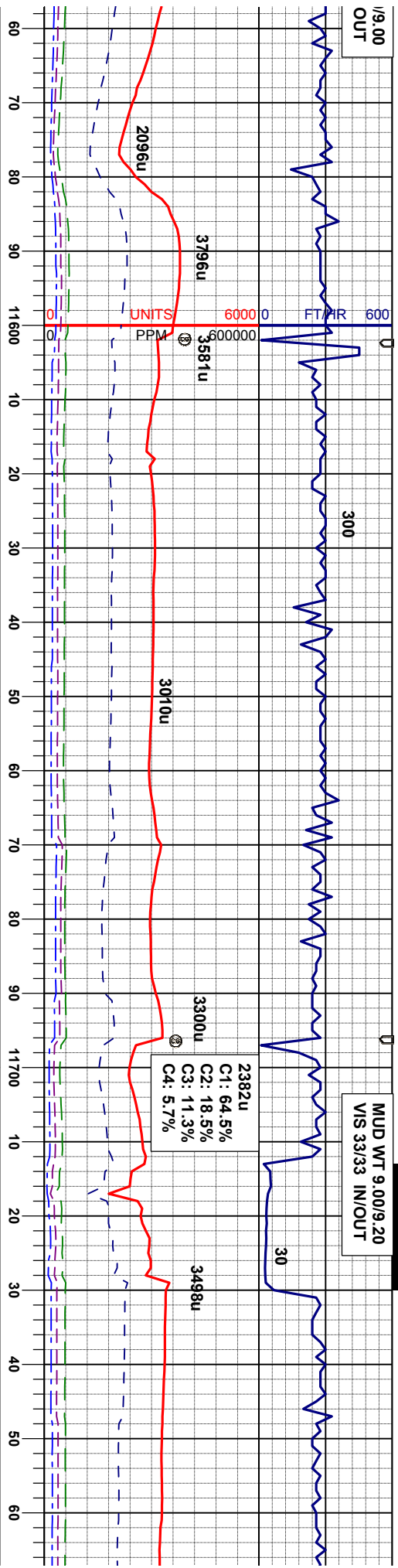


80% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc siltysh
20% MRL: m gy- gyblk, sbblky - sbply,
smets, sl firm - modstf, silty-slmot, calc,
sme pyr cld, sme chk, tr ise fos, tr shyss

80% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc siltysh
10% SHYSS: wh, gy, brn, fros, hd, brit clus,
vifr, sbang-sbrd, v calc
10% MRL: m gy- gyblk, sbblky - sbply,
smets, sl firm - modstf, silty-slmot, calc,
sme pyr cld, sme chk, tr ise fos, tr shyss, tr
noncalc siltysh

90% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sbply-sbblky, vit tex, v calc
10% MRL: m gy- gyblk, sbblky - sbply,
smets, sl firm - modstf, silty-slmot, calc,
abnt fos frag, tr noncalc siltysh





6 LS: wn, crm, lt gy, lt brn, fgrrl, stf, brit-
 sbply-sbply, vit tex, v calc
 6 MRL: m gy-gyblk, sbply - sbply,
 afs, sl firm - modstf, silty-slmot, calc,
 it fos frag, tr noncalc siltysh

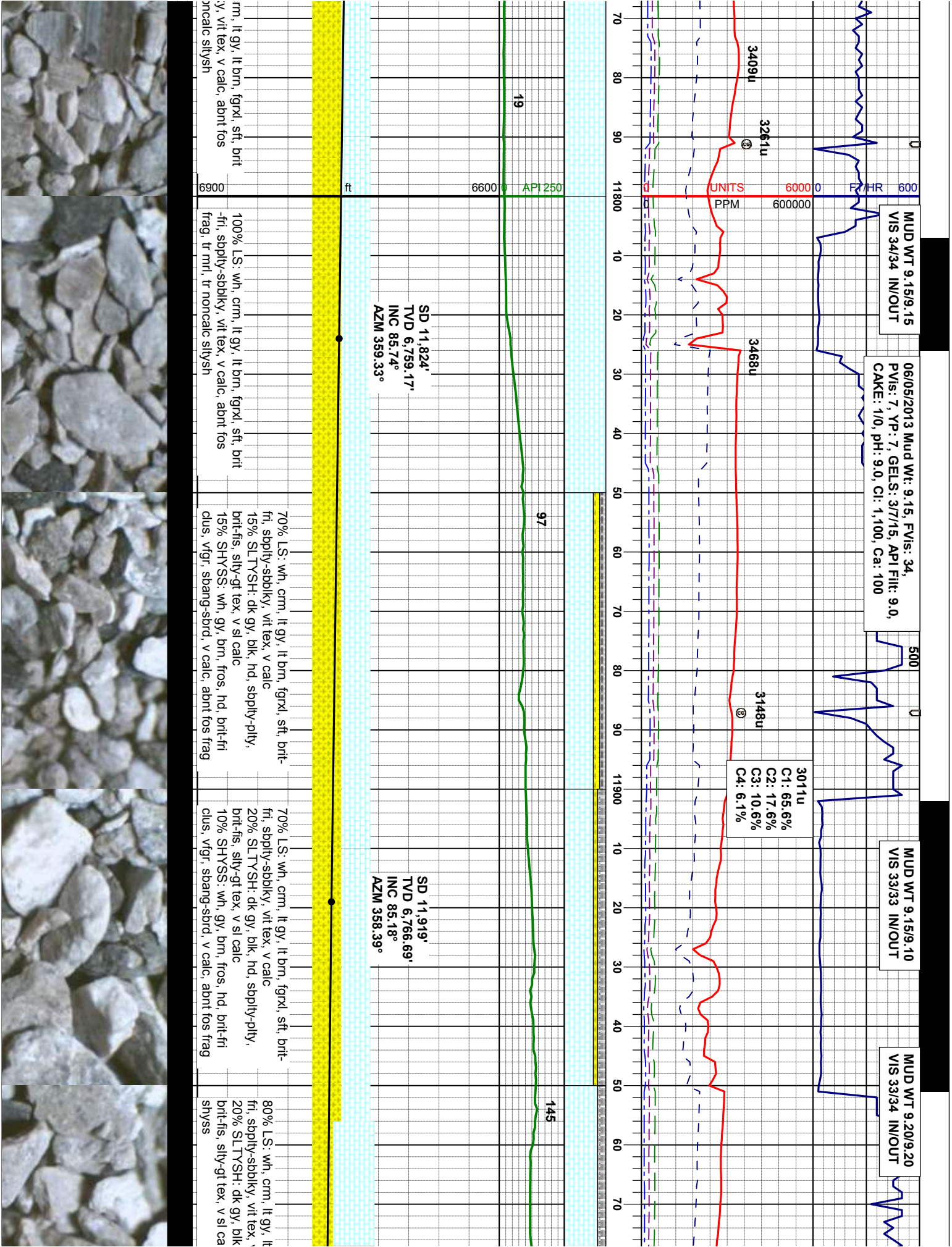
85% L.S.: wh, crm, lt gy, lt bn, fgxl, stf, brit-
fri, sbply-sbdkly, witex, v calc
15% MR.L.: m gy- gyblk, sbdkly - sbply,
smefs, sl firm - modstf, slfy-slmot, calc,
abt fos frag, lt noncalc slfysh

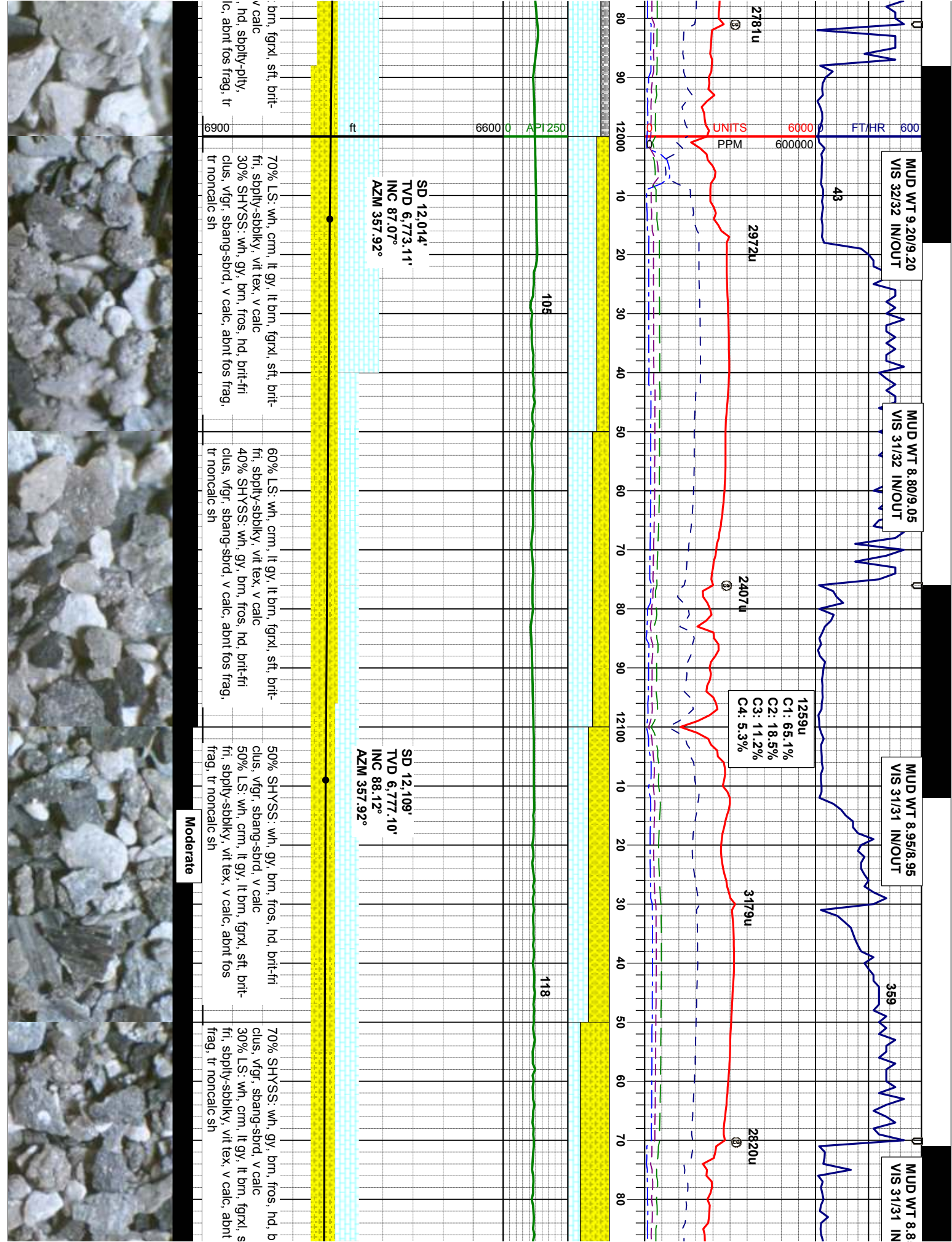
85% L.S.: wh, crm, lt gy, lt bn, fgry, sft, brit-
fri, sbply-sbdkly, wltex, v calc
15% MR.L: m gy- gyblk, sbdkly - sbply,
smefs, sl firm - modst, slty-slmot, calc,
abt tos frag, lt noncalc sltysh

90% L.S.: wh, crm, lt gy, lt brn, fgryl, stf, brit-
fri, sbply-sbblky, vit tex, v calc
10% MRL: m gy- gyblk, sbblky - sbply,
smefs, sl firm - modst, slty-slmot, calc,
abnt fos frag, lt noncalc sltysh

100% LS: wh, c
-fri, sbply-sbplk
frag, tr mrl, tr nc







5/8.85
/OUT

MUD WT 8.90/8.85
VIS 31/31 IN/OUT

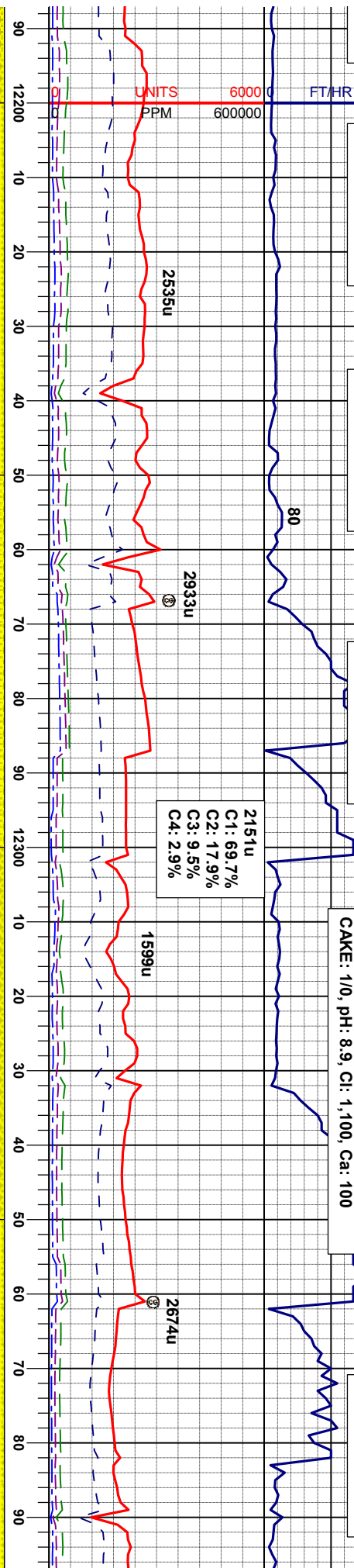
MUD WT 9.00/9.05
VIS 33/31 IN/OUT

MUD WT 9.00/9.00
VIS 32/32 IN/OUT

06/05/2013 Mud Wt: 9.00, FV's: 32,
PV's: 6, YP: 6, GELS: 3/7/13, API Filtr: 8.0,
CAKE: 1/0, pH: 8.9, Cl: 1,100, Ca: 100

451

MUD WT 9.05/9.05
VIS 33/33 IN/OUT



SD 12,204'
TVD 6,779.12'
INC 89.44°
AZM 358.57°

SD 12,298'
TVD 6,778.31'
INC 91.54°
AZM 357.98°

SD 12,393'
TVD 6,776.7'
INC 90.37°
AZM 357.68°

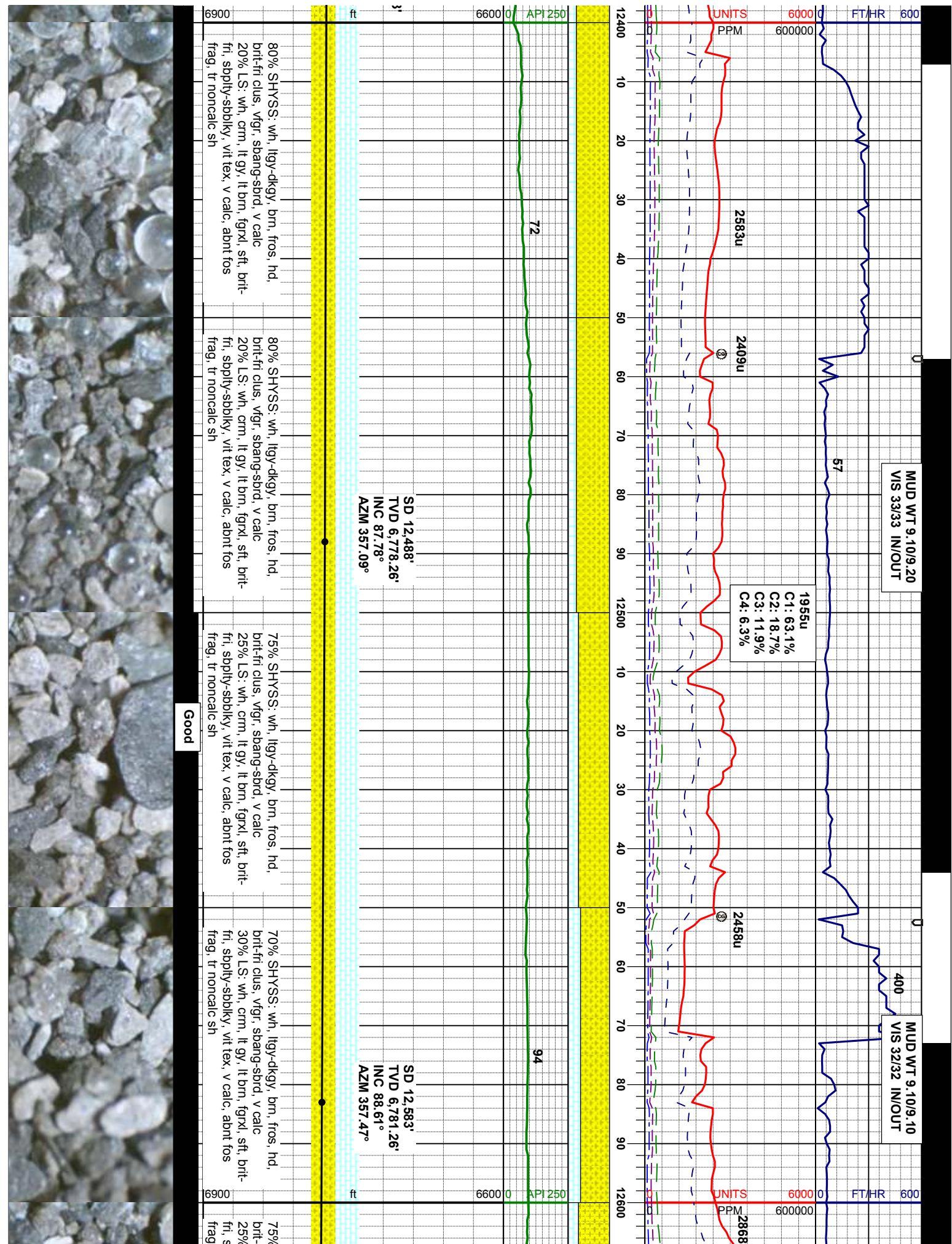
80% SHYSS: wh, lly-dkgy, brn, fros, hd,
brt-frt clus, vfg, sbang-sbrd, v calc
20% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brt-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc sh

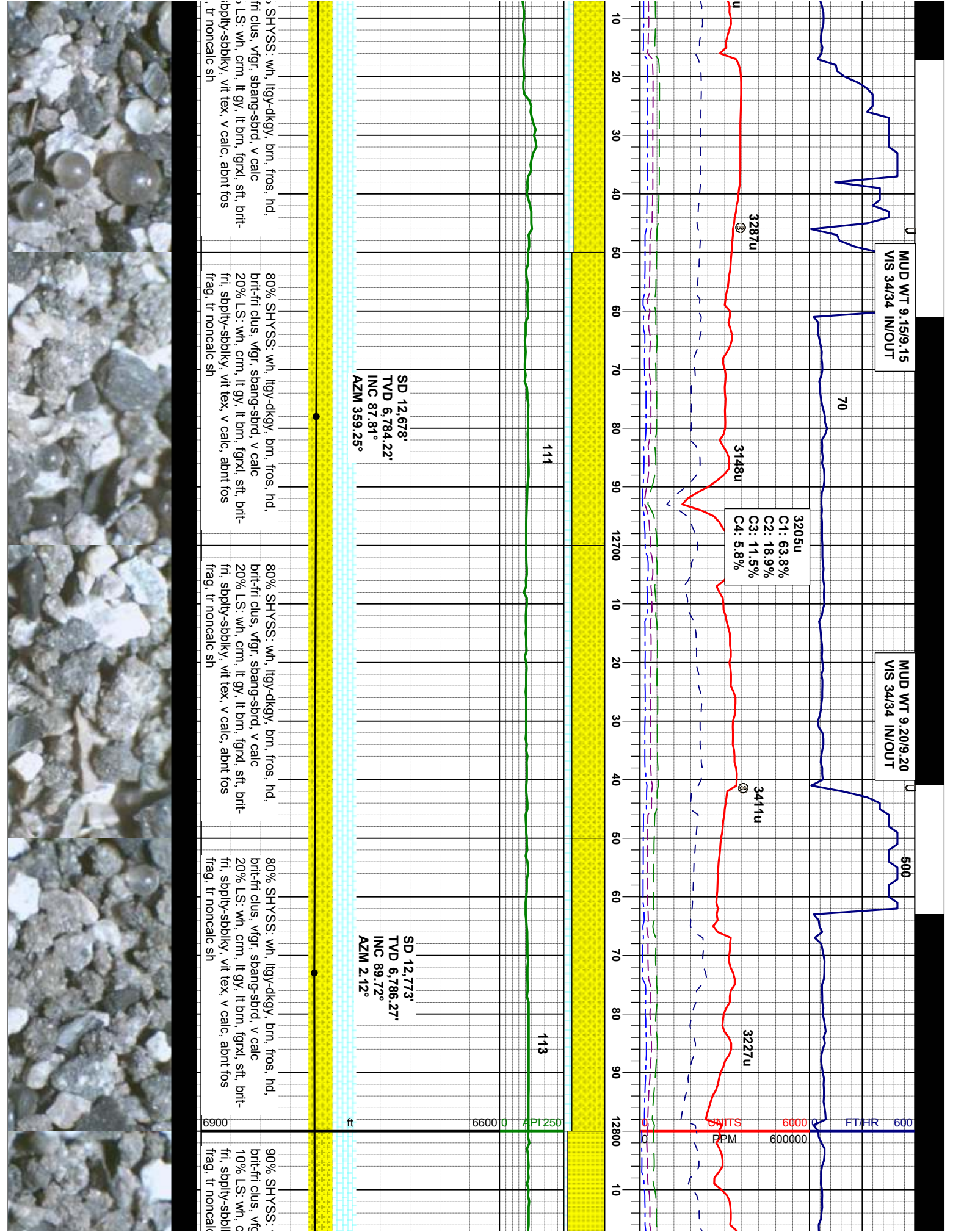
90% SHYSS: wh, lly-dkgy, brn, fros ip, hd,
brt-frt clus, vfg, sbang-sbrd, v calc
10% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brt-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc sh

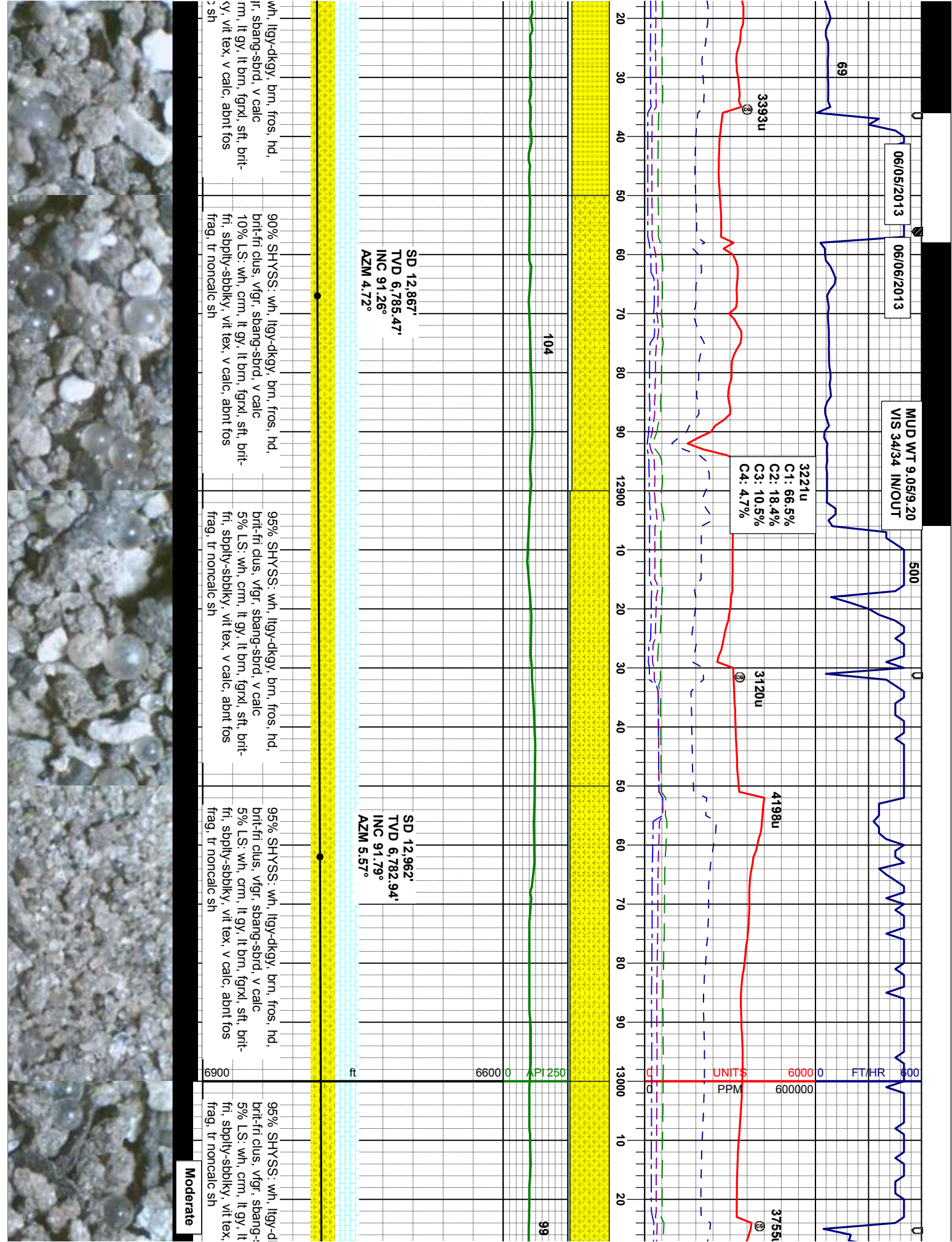
85% SHYSS: wh, lly-dkgy, brn, fros, hd,
brt-frt clus, vfg, sbang-sbrd, v calc
15% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brt-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc sh

80% SHYSS: wh, lly-dkgy, brn, fros, hd,
brt-frt clus, vfg, sbang-sbrd, v calc
20% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brt-
fri, sbply-sbblky, vit tex, v calc, abnt fos
frag, tr noncalc sh









06/06/2013 Mud Wt: 9.10, FVIs: 33,
PVIs: 7, YP: 6, GELS: 3/8/15, API Filt: 7.5,
CAKE: 1/0, pH: 8.7, Cl: 1,200, Ca: 80

276

06/06/2013 Mud Wt: 9.10, FVIs: 34,
PVIs: 7, YP: 6, GELS: 3/7/14, API Filt: 7.0,
CAKE: 1/0, pH: 8.6, Cl: 1,200, Ca: 80

46

06/06/20

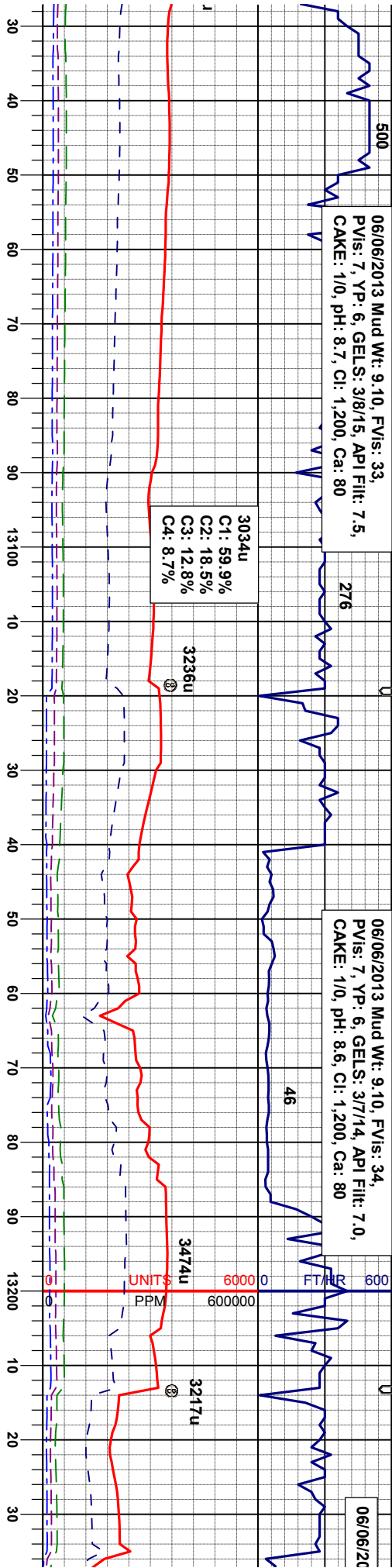
3034u
C1: 59.9%
C2: 18.5%
C3: 12.8%
C4: 8.7%

3236u

3474u

3217u

UNITS
PPM



SD 13,057'
TVD 6,780.69'
INC 90.92°
AZM 3.70°

SD 13,152'
TVD 6,780.29'
INC 89.57°
AZM 1.37°

TOOH @ 13,243' M
FOR MUD MOTOR

kg, brn, fros, hd,
sbrd, v calc
brn, fgrxl, sft, brit-
v calc, abnt fos

100% SHYSS: wh, lty-dkgy, brn, fros, hd,
brit-fr clus, vfgr, sbang-sbrd, v calc

100% SHYSS: wh, lty-dkgy, brn, sme fros,
hd, brit-fr clus, vfgr, sbang-sbrd, v calc,
abnt fos frag, tr ls, tr sh

100% SHYSS: wh, lty-dkgy, brn, sme fros,
hd, brit-fr clus, vfgr, sbang-ang, v calc,
abnt fos frag, tr ls, tr sh

100% SHYSS: pred gy & brn, sme
ip, hd, brit-fr clus, vfgr, sbang-ang,
abnt fos frag, tr ls, tr sh

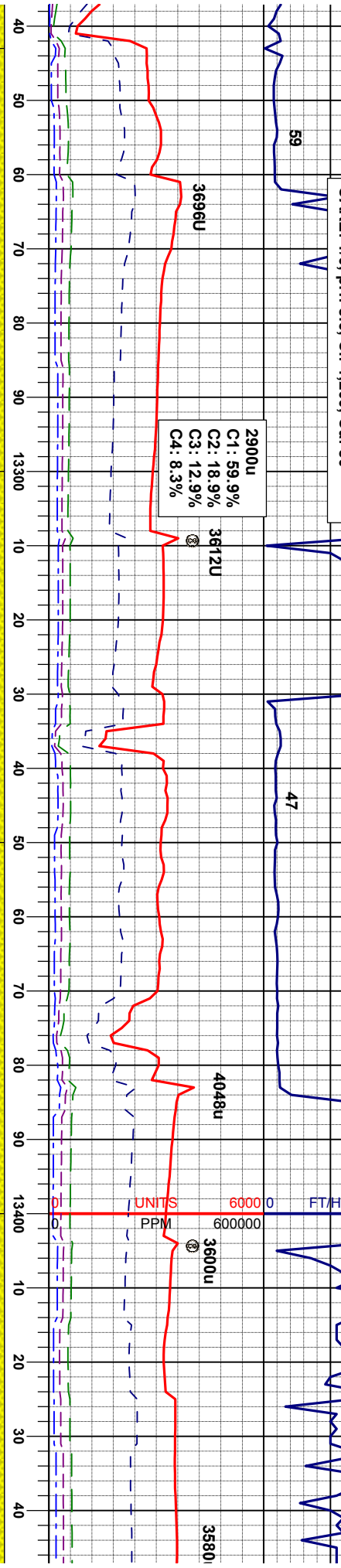


13 06/07/2013

06/07/2013 Mud Wt: 9.00, FVis: 33,
PVIS: 7, YP: 5, GELS: 3/6/13, API Filt: 8.0,
CAKE: 1/0, pH: 8.6, Cl: 1.200, Ca: 80

MUD WT 9.05/9.00
VIS 34/34 IN/OUT

MUD WT 9.10/9.15
VIS 36/35 IN/OUT



C1: 59.9%
C2: 18.9%
C3: 12.9%
C4: 8.3%

D
RESUMED DRILLING LATERAL
ON 06/07/2013 @ 02:50 MST

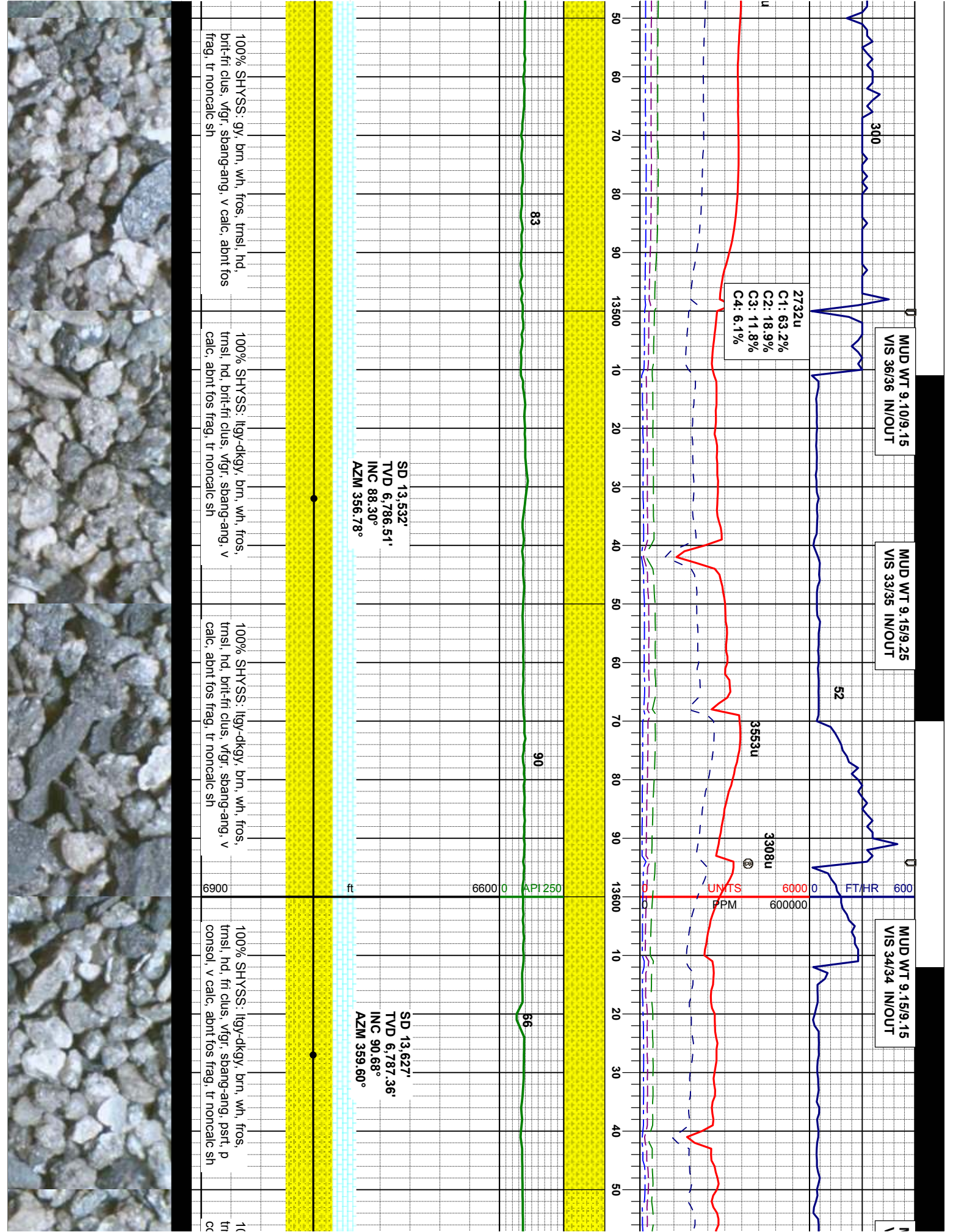
SD 13,247'
TVD 6,782.38'
INC 87.90°
AZM 2.05°

SD 13,342'
TVD 6785.20'
INC 88.70°
AZM 0.86°

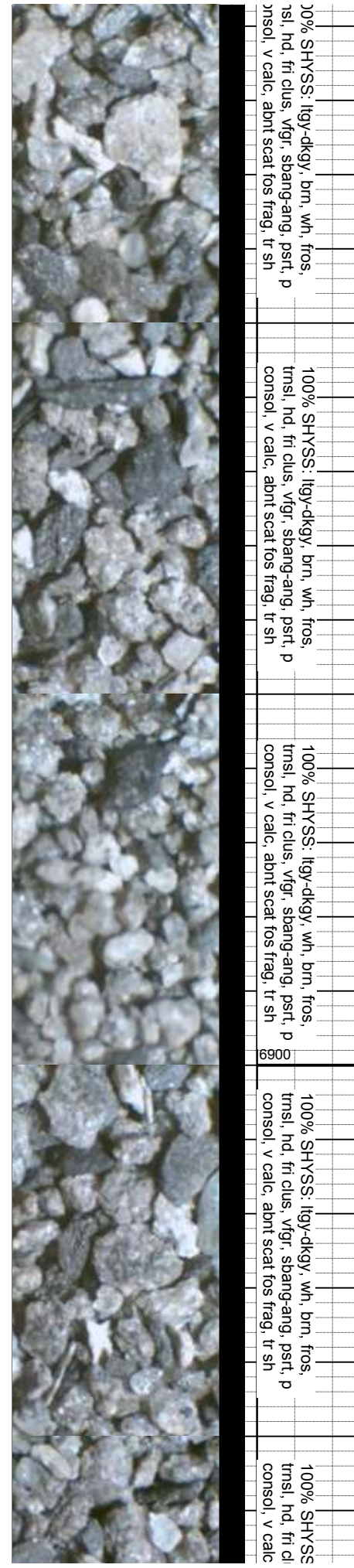
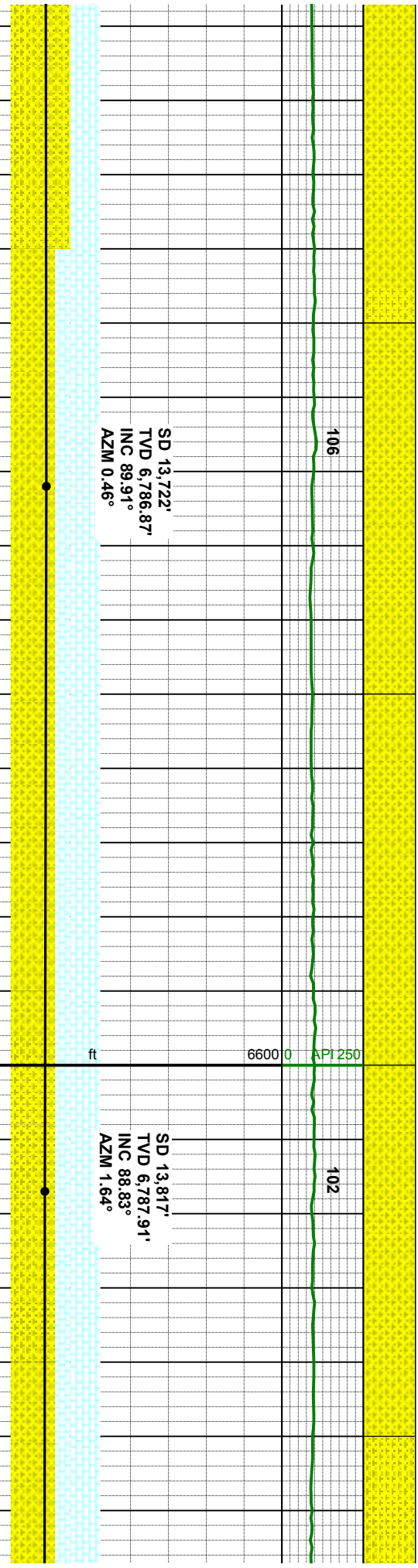
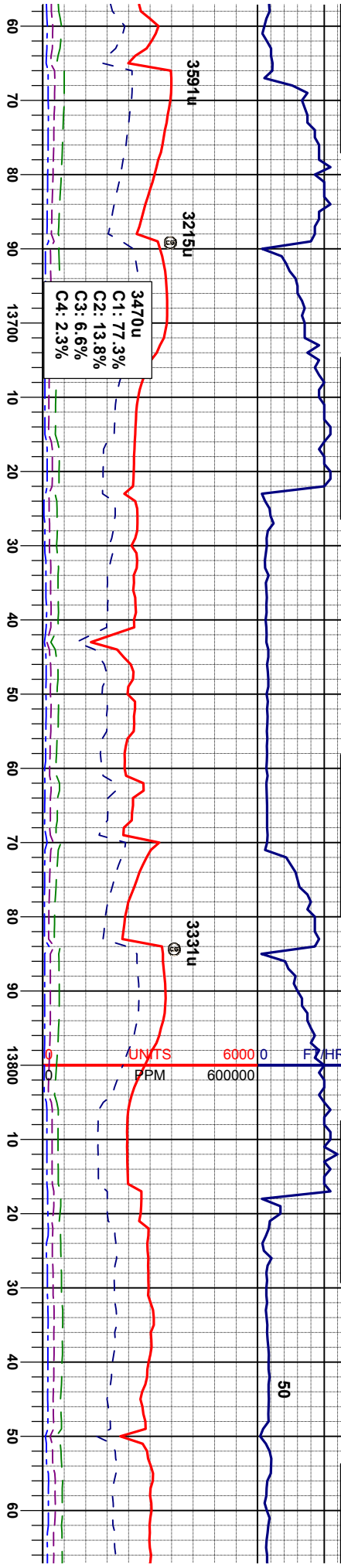
SD 13,437'
TVD 6,785.69'
INC 90.71°
AZM 356.69°

wh, fros	100% SHYSS: pred gy & brn, sme wh, fros	100% SHYSS: pred gy & brn, sme wh, fros	100% SHYSS: pred gy & brn, sme wh, fros
v calc,	ip, hd, brit-fri clus, vfgr, sbang-ang, v calc,	ip, hd, brit-fri clus, vfgr, sbang-ang, v calc,	ip, hd, brit-fri clus, vfgr, sbang-ang, v calc,
	abtnt fos frag, scat ls, scat sh, contn w/	abtnt fos frag, tr ls, tr sh	abtnt fos frag, tr noncalc sh
	uphole sed from T1H		





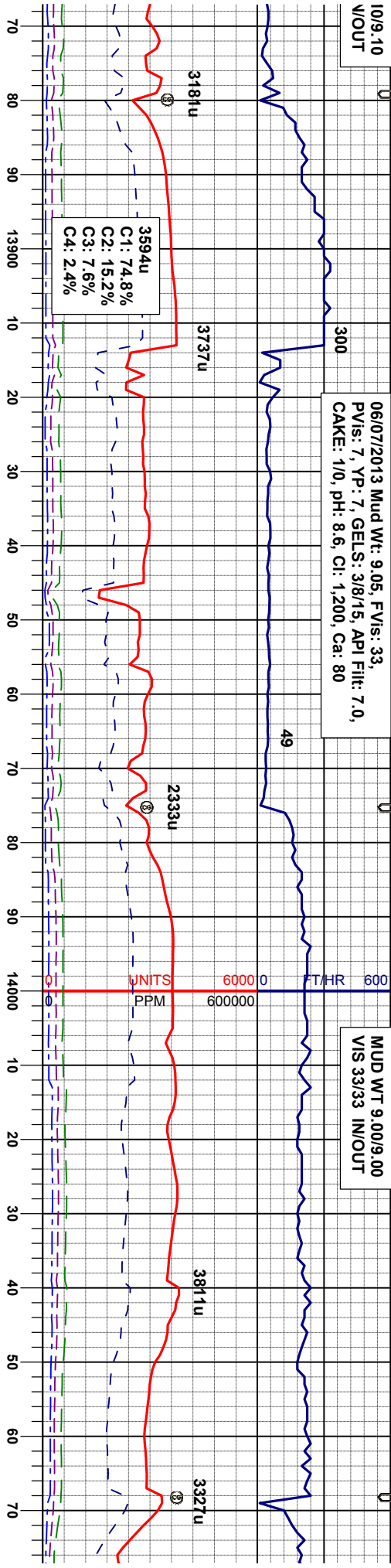
MUD WT 9.20/9.20 /IS 36/36 IN/OUT	MUD WT 9.15/9.20 VIS 36/34 IN/OUT	MUD WT 9.10/9.10 VIS 34/34 IN/OUT	MUD WT 9.10/9.10 VIS 33/33 IN/OUT	MUD WT 9.1 VIS 33/33 IF
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10/9/10
V/OUT

06/07/2013 Mud Wt: 9.05, FVis: 33,
PVIS: 7, YP: 7, GEELS: 3/8/15, API Filtr: 7.0,
CAKE: 1/0, pH: 8.6, Cl: 1,200, Ca: 80

MUD WT 9.00/9.00
VIS 33/33 IN/OUT

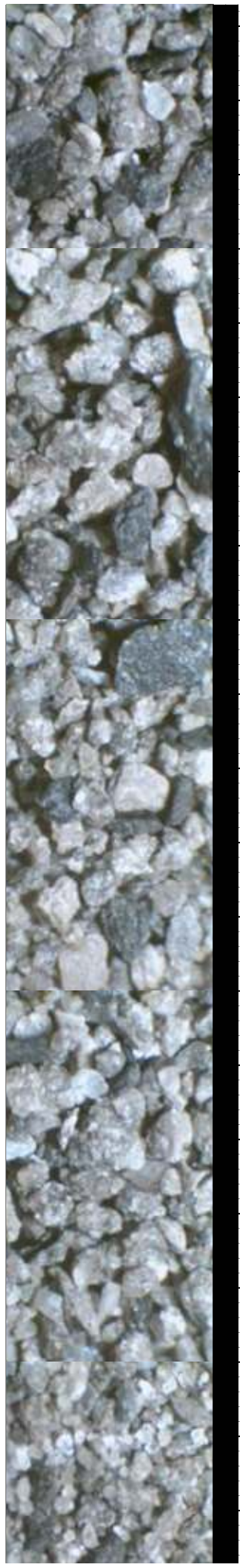


SD 13,912'
TVD 6,788.43'
INC 90.55°
AZM 3.24°

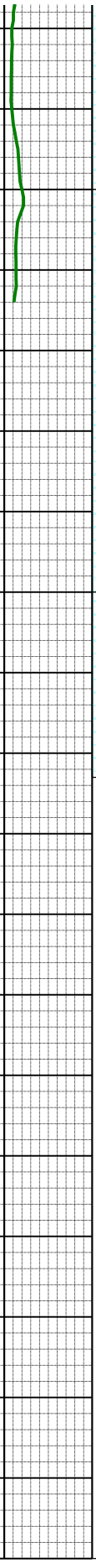
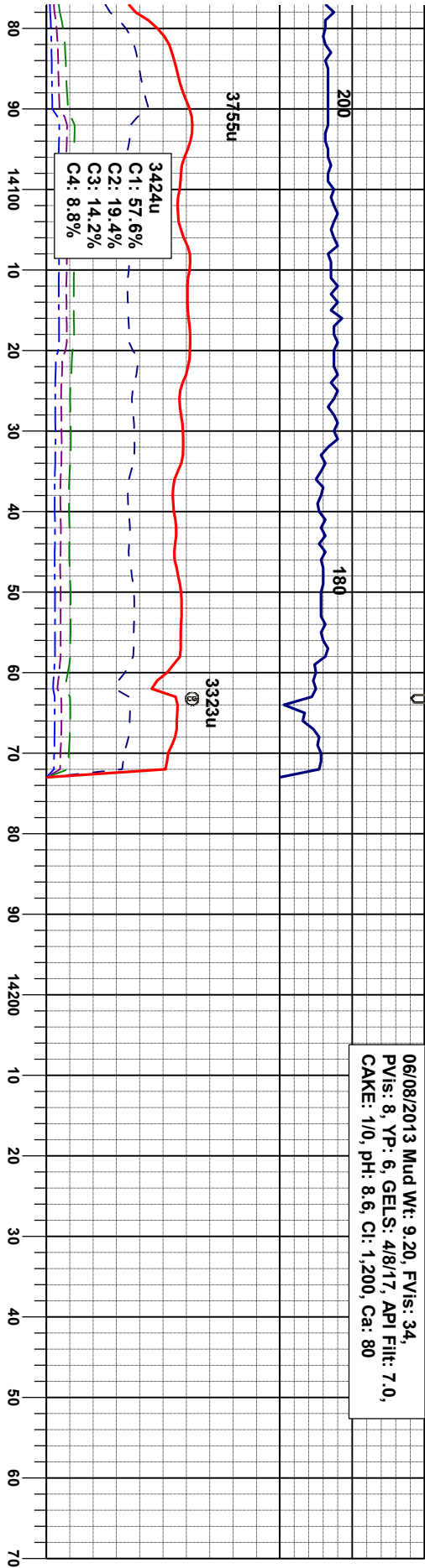
SD 14,007'
TVD 6,785.42'
INC 93.08°
AZM 3.70°

90% SHYSS: ltgy-dkgy, wh, brn, fros, trns, hd, fri clus, vfgr, sbang-ang, psrt, p consol, v calc
10% LS: wh, crm, lt gy, lt brn, fgxl, sft, brit-fri, spbly-sbblky, vit-wxy tex, v calc, abnt scat fros frag, tr sh

80% SHYSS: ltgy-dkgy, wh, brn, fros, trns, hd, fri clus, vfgr, sbang-ang, psrt, p consol, 20% LS: wh, crm, lt gy, lt brn, fgxl, sft, brit-fri, spbly-sbblky, vit-wxy tex, v calc thru, abnt scat fros frag



06/08/2013 Mud Wt: 9.20, FVIs: 34,
PVIs: 8, YP: 6, GELS: 4/8/17, API Filtr: 7.0,
CAKE: 1/0, pH: 8.6, CI: 1,200, Ca: 80



SD 14,110'
TVD 6,779.86'
INC 93.11°
AZM 2.94°

Projection at Bit:
SD 14,173'
TVD 6,776.44'
INC 93.11°
AZM 2.94°

Wellsite Geological Services Provided by
Columbine Logging Inc.

80% SHYSS, lgy-dky, brn, fros, trns, hd,
fri clus, vfg, shang-ang, psrt, p consol
20% LS: wh, crm, lt gy, lt brn, fgrxl, sft, brit-
fri, sppty-sbdkly, vit-wxy tex, v calc thru,
abnt scat fos frag

